

February 28, 2002

Ms. Marsha Prillwitz
California Department of Water Resources
Office of Water Use Efficiency
P.O. Box 942836
Sacramento, CA 94236-0001

Subject: Proposition 13 Water Conservation Capital Outlay Grant Proposal

Dear Ms. Prillwitz:

Enclosed please find a Proposition 13 Water Conservation Capital Outlay Grant Proposal of the Marina Coast Water District. This proposal requests funds to rehabilitate water supply infrastructure on the former Fort Ord, which has been decommissioned and returned to civilian use. The District is now the operator of the water and sewer systems on the former base and is cooperating with other jurisdictions on its conversion to new uses. In this conversion the water supply system needs to be brought to municipal standards (full metering and adequate pressure control) and significant deferred maintenance concerns must be addressed.

The rehabilitation program consists of four components, additional leak detection, metering of unmetered housing and irrigation uses, pressure control and line replacement. Each component is analyzed individually herein regarding its water savings potential and cost effectiveness. This program will be of benefit to the District, its current and future customers on the former base, to the U.S. Army that continues to operate housing on portions of the base and to the California State University Monterey Bay which operates classroom and housing as well.

Enclosed are one original and eight photocopies of the proposal in addition to electronic files of the proposal and supporting spreadsheets in MS Word and Excel format, respectively.

The District appreciates the opportunity to submit this grant proposal. If you have any questions regarding the proposal, please contact David B. Meza, District Engineer at 831.582.2665.

Sincerely,

Michael D. Armstrong
General Manager

Marina Coast Water District

Appendix 2

RESUME

Application Number		Application for (a-urban, b-agriculture, c-DWR/WUE:	
151		a) Prop 13 Urban Water Conservation	
Principle Applicant(Organization/Affiliation)			
Marina Coast Water District			
Project Title			
Water Conservation System Rehabilitation Program			
First Name-Authorized		Last Name (AA):	Title
Michael D.		Armstrong	
Street Address		PO Box	
11 Reservation Road			
City		State	
Marina		CA	
Zip Code		Telephone Number(Include Area Code)	
93933		(831) 582-2605	
Fax Number (Include Area Code)		E-mail Address	
(831) 384-2479		marmstrong@mcwd.org	
First Name-Contact Per	Last Name-CP:		Contact-Title
David B.	Meza		
Contact-Street Address		Contact-PO Box	
11 Reservation Road			
Contact-City		Contact-State	
Marina		CA	
Contact-Zip Code		Contact-Phone Number	
93933		(831) 582-2665	
Contact-Fax Number		Contact-E-Mail Address	
(831) 883-3406		dmeza@mcwd.org	
Funds Requested (dollar amount)	Applicant Funds Pledged (dollar amount)	Total Project Costs (dollar amount)	
\$3,918,245.00	\$250,000.00	\$4,168,245.00	
Estimated Total Quantifiable Project Benefits (dollar amount)		Percentage of Benefits to be Accrued by App	
\$19,073,536.00		1	
Percentage of Benefits to be Accrued by CALFED or other		Estimated Annual Water to be Saved (acre-fe	
0		1739	
Estimated Total Amount of Water to be Saved (acre-fee		Over _____ Number of Years	
27580		20	
Estimated Benefits to be Realized (terms of water qual,instream			
none			
Duration of Project (month/year-month/year):		State-Wide	
10/02-01/04		<input type="checkbox"/>	
State Assembly District-location of project(27	State Senate District-location of project(1	15
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State Assembly District-location of project(State Senate District-location of project(10	

Congressional District(s)-location of project	17	Congressional District(s)-location of project(
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County-location of project	Most recent Urban Water Mgt Plan Submitt		
Monterey	12/1/2001		
Type Applicant-Urban(a)Agricl Feas Study(b) Gra	DWR WUE Projects	Project Focus	
e) other-subdivision of state(include public water)		b) Urban	

Project Type:

a) Implementation of Urban Best Management Practices

Quantifiable Objectives

Specify from choice (d) above

Specify from (k) above

Does Proposal involve change in land use (planned/future)ICheck box if yes

☐

**Marina Coast Water District
Proposition 13 Urban Water Conservation
Capital Grant Application**

PART II

February 28, 2000

Part 2 - Table of Contents

<u>Section</u>	<u>Page</u>
Summary	3
A. Scope of Work: Relevance and Importance	5
1. Nature, scope and objectives of the project	5
1.1 Leak Detection Component	6
1.2 Metering Component	6
1.3 Pressure Management Component	6
1.4 Line Replacement Component	6
B. Scope of Work: Technical/Scientific Merit, Feasibility, Monitoring And Assessment	7
1. Methods, Procedures and Facilities	7
2. Task List and Schedule	7
3. Monitoring and Assessment	7
4. Preliminary Plans and Specifications	8
5. Qualifications of the Applicants and Cooperators	8
C. Budget and Costs	8
1. Budget Breakdown and Justification	8
2. Cost-sharing	9
3. Benefit Summary and Breakdown	9
3.1 Benefit Cost Methodology	10
3.2 Benefit Cost Analysis	10
3.3 Contribution to CALFED Goals	11
D. Outreach, Community Involvement and Acceptance	11
References	13

APPENDIX

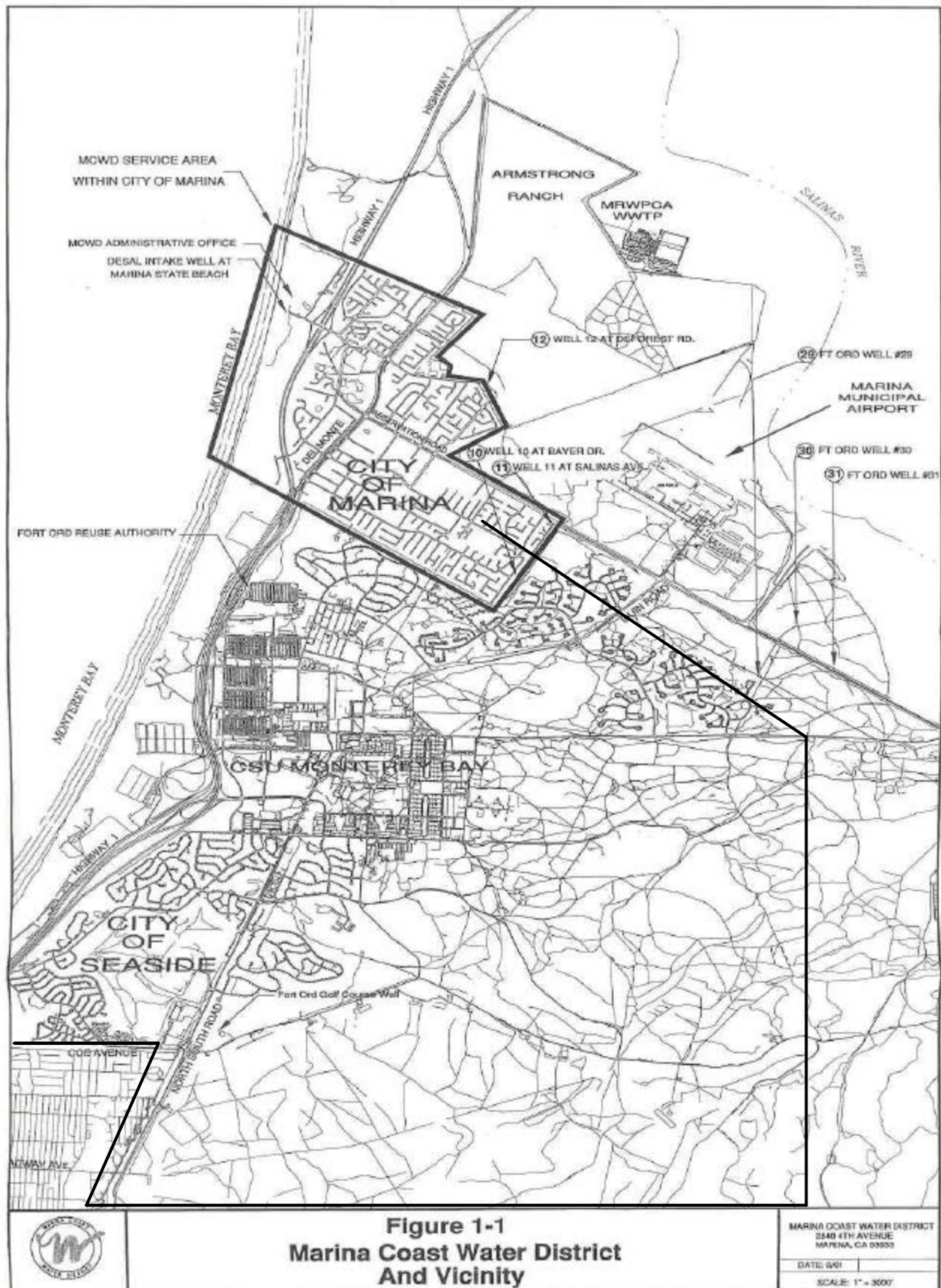
1. Preliminary Plans and Specifications
2. Resume
3. Supporting Tables
4. Board Resolution
5. Letters of Support

Summary

The Marina Coast Water District (MCWD) provides water and wastewater collection services to the City of Marina and the former Fort Ord army base in Monterey County, California (**Figure 1-1**). Potable water for both the City and the former Fort Ord comes from wells developed in the Salinas Valley Groundwater Basin, as well as a small desalination plant operated by the District. As a result of downsizing of the Army's presence at Fort Ord, MCWD took over operation of the water supply and wastewater collection systems in 1997. The former Fort Ord water system was neither designed nor maintained to public water industry standards and requires significant rehabilitation and improvement. Based on recently compiled 2001 data, it is estimated that the Fort Ord system has a 30% unaccounted water loss rate.

MCWD proposes to acquire a Proposition 13 Capital Grant to help it rehabilitate the Fort Ord system, conserving water and reducing the District's need to develop new sources. Capital investments called for in this grant application divide into four program components: additional leak detection, metering of single family residences and dedicated landscape uses, replacement of pressure reduction valves (PRVs) and associated gate valves in the distribution system and immediate replacement of certain badly leaking distribution lines. The goal of this program is to reduce the unaccounted water loss in the system, provide conservation incentives for customers through metering and commodity charges, protect groundwater yield and reduce the need for development of additional water resources. The objectives are 1) secure funding to complete all 130 miles of leak detection survey work for the former Fort Ord; 2) meter all unmetered single family (attached and detached) homes on the former Fort Ord, and place meters at dedicated landscape uses of California State University Monterey Bay, 3) replace all faulty PRVs and pressure control gate valves in the system reducing loss directly from the valves and faulty distribution lines, and 4) immediately replace distribution lines known to be seriously leaking. MCWD has received a water conservation feasibility study grant from the Department of Water Resources that provides funds to perform leak detection services on about half of 130 miles of Fort Ord distribution lines. This analysis will be focused on areas beyond that which are known to be in serious need of replacement. Results from that program will dictate additional rehabilitation efforts and potentially, subsequent grant applications for distribution system rehabilitation.

The total program cost is expected to be \$4,168,245. Water loss savings is expected to be about 410 acre-feet per year following meter installation and pipeline rehabilitation completion. Water efficiency savings are estimated to be about 1,329 acre-feet per year following PRV and gate valve completion. Water saved is expected to cost about \$983 per acre-foot as compared to alternative cost of water from MCWD's existing experience of providing desalination of \$1,961 per acre foot.



A. Scope of Work: Relevance and Importance

1. Nature, scope and objectives of the project.

This proposed program is a set of water system rehabilitation projects that are designed to stem the high rate of water loss from the Fort Ord water system. Stemming these losses will limit demands on groundwater resources in the Marina area, help reduce seawater intrusion in the upper and middle aquifers of the Salinas Groundwater Basin and reduce demands on the deep aquifer, which is considered vulnerable to seawater intrusion. Reducing losses will also cut the need to develop additional water resources necessary to improve the reliability of the District's water supply and reduce operating costs.

The goal of this program is to reduce the unaccounted water loss in the system, provide conservation incentives for customers through metering and commodity charges, protect groundwater yield and reduce the need for development of additional water resources. The objectives are 1) secure funds to complete leak detection survey for all 130 miles of the former Fort Ord (BMP 3); 2) meter all unmetered single family (attached and detached) homes on the former Fort Ord and place meters at approximately 40 acres of dedicated landscape uses at California State University Monterey Bay (BMP 4); 3) replace all faulty PRVs and associated gate valves in the system which will help reduce loss rates from faulty distribution lines (Pre-BMP #6), and; 4) immediately replace distribution lines known to be seriously leaking (BMP 3).

This program is consistent with the District's Urban Water Management Plan, which identifies the need for additional conservation efforts and development of alternative water resources to lessen the vulnerability of the District to the deep aquifer of the Salinas Valley Groundwater Basin. It is also consistent with the regional Salinas Valley Water Project that identifies need for development of additional water resources and efforts that will reduce groundwater pumping and subsequent seawater intrusion into the Salinas Valley Groundwater Basin. The program will reduce the burden to the California State University system in expanding CSU Monterey Bay by assisting the CSU system to reduce demands for other state funds to upgrade CSUMB and CSUMB Foundation infrastructure. The CSUMB campus is on the former Fort Ord. The CSUMB Foundation operates housing and dedicated landscape uses on the former base that will receive meters.

1.1 Leak Detection Component

MCWD has been awarded a water conservation feasibility study grant to assess the cost-effectiveness of implementation of additional BMPs and Pre-BMPs. This grant has a water audit and leak detection component. Due to amount limitations in the grant, only enough funds to assess half of the former Fort Ord water system was able to be included. This proposal requests the additional funds necessary to perform a complete

leak detection survey of the system which will reveal leaks that are otherwise unknown to the District and allow the district to prioritize system improvements.

1.2 Metering Component

The District proposes to install meters at single-family and attached housing units on the former Fort Ord and at landscape uses on the CSUMB campus. Meters will be placed at single family homes now utilized by the Army for residences related to the Defense Language Institute and the Naval Postgraduate School. Master meters will be placed at the service lines leading to multi-family attached housing at CSUMB. At each multi-family unit, sub-metering components will be installed for each housing unit necessary to effect the water savings assumed in this proposal. At this time, CSUMB has indicated that it will agree to provide a local share of \$250,000 towards the cost of submetering. This arrangement has been discussed with CSUMB facilities managers and an informal commitment to this arrangement has been reached. No expenditure of grant funds for master metering of CSUMB facilities would occur until a binding commitment to submeter is received from CSUMB, thus assuring the savings at the stated costs.

Eightteen meters will also be placed at individual dedicated irrigation use sites at the CSUMB campus totaling some 40 acres of irrigated use.

1.3 Pressure Management Component

Due to deterioration of pressure reduction valves and gate valves from lack of maintenance as a federal facility prior to takeover by the District, the former Fort Ord distribution system lacks adequate pressure control. Gate valves are inoperative and pressure reduction valves (PRVs) are both inoperative and mostly leaking as well. This leads to excessive breakage rates for pipes and joints and exacerbates leak rates where pipes are in disrepair. Replacement of faulty PRVs and gate valves will allow the restoration of proper pressure zones and allow the system to operate efficiently. It will also allow better isolation of specific areas in the event of breaches in the system and lower water losses in such events without loss of customer service. In order to achieve the water savings, replacement of gate valves and PRV's must be accomplished together.

1.4 Line Replacement Component

Since takeover of the former Fort Ord system by the District, staff has catalogued serious leaking sections of distribution system piping. Approximately 1,760 feet of distribution system piping in twenty sections will be replaced addressing over twenty known leaks.

B. Scope of Work: Technical/Scientific Merit, Feasibility, Monitoring and Assessment

1. Methods, Procedures and Facilities.

MCWD will employ contract labor to perform engineering design and construction for each program component except for engineering design work relative to the meter installation component. Request for proposals for engineering design work will be solicited for the PRV and pipeline replacement components and the leak detection services. Request for bids will be solicited for construction work related to the three components involving construction.

2. Task List and Schedule

Figure 2 is a work schedule for the program components. Deliverables for each program component include plans and specifications for the program component and completion of work detailed by the plans and specifications.

Figure 2																				
Work Schedule																				
	Months after Grant Receipt																			
Program Component	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1.0 Complete Leak Detection																				
1.1 RFP/Contracting																				
1.2 Leak Detection Field Work																				
1.3 Detection Report and Recommendations																				
2.0 Meter Installations																				
2.1 RFP Design and Contracting																				
2.2 Bid Package and Contracting																				
2.3 Installation																				
3.0 Pressure Reduction																				
3.1 RFP Design and Contracting																				
3.2 Bid Package and Contracting																				
3.3 Installation/replacement																				
4.0 Line Replacement																				
4.1 RFP Design and Contracting																				
4.2 Bid Package and Contracting																				
4.3 Installation																				
5.0 Monitoring																				
(monthly data, annual summary, minimum three years)																				

3. Monitoring and Assessment.

MCWD currently accounts for unexplained water loss for its two service areas, the City of Marina and the former Fort Ord system. MCWD will track water loss following completion of the components that are funded. If more than one component is funded, an attempt will be made to segregate the relative water savings for each component.

For the metering component, MCWD will identify a sample area of homes that can be isolated via a master meter. Before and after master meter readings will be made to assess an average per unit savings for residential water meters. For irrigation meter installations, actual water use will be compared to ET values for the same period and historical estimates of irrigation use. These values will be subtracted from overall unaccounted water loss reductions. The remainder of the reductions will be attributed to a combination of pressure relief valve, gate valve and water line replacement.

Monitoring will begin with collection of monthly data beginning upon completion of all program components and continue for a minimum of three years. An annual summary report will be prepared assessing the results of the program.

4. Preliminary Plans and Specifications

The Appendix contains preliminary plans and specifications for meters, PRVs and pipeline replacement. Upon award of grant, project-specific plans and specifications will be prepared

5. Qualifications of the Applicants and Cooperators

This project will be managed by David B. Meza, P.E., Chief Engineer of the Marina Coast Water District, whose resume is attached in the Appendix.

C. Budget and Costs

1. Budget Breakdown and Justification

Table 1 depicts summary budget and costs for the program. Individual program element budgets are provided in Appendix 3. Summary costs are as follows:

• Additional Leak Detection	\$75,000
• Metering	\$2,956,544
• Pressure reduction	\$959,029
• Line Replacement	<u>\$177,172</u>

Total	\$ 4,168,245
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A professional engineer estimated costs, using standard methods and a 10% contingency, a level utilized by Marina Coast Water District based upon engineering and construction experience.

The District will absorb overhead costs for project management and for development of plans and specifications for the metering project component. Table 1 depicts expected contractor costs to be funded by the grant. All facilities are in public easement or fee title lands, or otherwise do not require additional land purchase or easement. No structures, legal, license or other costs are expected.

2. Cost-sharing

The District proposes to absorb overhead costs for project management and development of plans and specifications for the metering project component. CSUMB has indicated that it will pledge to commit \$250,000 towards the metering component of the project for CSUMB housing

3. Benefit Summary and Breakdown

The program and individual project components will serve to reduce water losses from leaking system infrastructure and by providing for water use accountability for homes and irrigated areas. Estimated savings and benefit/cost analysis follows below.

Table 1

Budget Summary

Project Description

	Materials	Labor	Other	Project Total
1.0 Additional Leak Detection			\$75,000	\$75,000
2.0 Metering				
2.1 Residential Meters				
2.1.1 Army	\$230,700	\$641,160		
2.1.2 CSUMB	\$46,960.00	\$328,803	\$1,153,000	
2.2 Landscape	\$8,500	\$29,592		
2.3 Environ., Engr.and Admin.			\$273,957	
2.4 Construction Contingency			\$243,872	
Subtotal	\$286,160	\$999,555	\$1,670,829	\$2,956,544
3.0 Pressure Reduction				
3.1 Pressure Reduction Valves	\$445,000	\$134,100		
3.2 Gate Valves	\$79,900	\$152,800		
3.3 Environ., Engr.and Admin.			\$64,049	
3.4 Construction Contingency			\$83,180	
Subtotal	\$524,900	\$286,900	\$147,229	\$959,029
4.0 Distribution Line Replacement				
4.1 Line Replacement	\$65,400	\$69,200		
4.2 Environ., Engr.and Admin.			\$29,612	
4.3 Construction Contingency			\$13,460	
Subtotal	\$65,400	\$69,200	\$43,072	\$177,672
Grand Total				\$4,168,245

3.1 Benefit Cost Methodology

The Marina Coast Water District currently relies on groundwater and a small amount of desalinated water to serve its customers. Plans are underway to recycle the total amount of wastewater available to the district and provide a distribution system that will allow this recycled water to be put to beneficial use (MCWD Urban Water Management Plan 2001). As noted in the MCWD Urban Water Management Plan, additional efforts are necessary to lessen demands on the groundwater resources and assure supply reliability, such as the conservation projects proposed here.

Alternatives identified in the Urban Water Management Plan for additional water resources include more desalination or water transfers from agricultural uses in the Salinas Valley. For purposes of benefit cost analysis, additional desalination is posed as the alternative to the conservation projects described in this proposal. While water transfers from agriculture might be a more cost-effective alternative, they are deemed less feasible at this point due to their negative impact on the Salinas Valley region's agricultural economy. Reliably estimating the costs of such an approach lacks precision at this time due to unknown mitigation costs and the potential need for new infrastructure development necessary to effect a transfer.

The most likely desalination expansion would be an expansion of the District's current desalination facility. Based on current actual costs of this facility (See Appendix Table 3-1) additional water supply could cost \$1,961 per acre-foot. For purposes of benefit-cost analysis, this potential water supply cost is used as an estimate of alternative supply costs.

Groundwater is not considered an alternative water supply as the Salinas Valley Groundwater Basin is currently in an overdraft condition and seawater continues to intrude into the upper and middle aquifers in the vicinity of the District's groundwater wells.

3.1 Benefit Cost Analysis

Table 2 depicts the benefit cost analysis for projects within each program component. Appendix 3 contains tables depicting detailed benefit cost analysis by component and program costs. No benefit cost is calculated for the leak detection program as it would be dependent upon replacement or repair costs for leaks detected which are currently unknown. This analysis is also believed to be conservative in that it does not take into account savings losses from leaking lines or fewer failures of joints and valves due to the benefits of better pressure control (pressure control savings are based on rehabilitation of PRV's only).

Table 2 Program Benefit - Cost

Program Component	Annual Savings Acre-Feet	Average Cost per AF Savings	Average Benefit- Cost Ratio
Metering	199	\$ 1288*	2.63*
Pressure Reduction	1329	\$ 187	11.51
Line Replacement	211	\$ 1,475	1.46

* The Army cost savings per AF is \$485 with a B/C ratio of 4.04. The CSUMB cost savings per AF is \$1,607 with a B/C ratio of 1.22.

3.3 Contribution to CALFED Goals

The Marina Coast Water District is outside of the CALFED problem and solution areas. However, this program is consistent with CALFED goals and furthers regional solutions to water resource problems. To the extent water resource solutions for the District can be achieved within the Salinas Valley watershed, there will be lessened pressure to seek imported water source solutions via the State or Federal water projects and a connection to San Luis Reservoir.

The program is consistent with the following CALFED element goals:

- Water management – the program will improve the availability and reliability of the District's supplies through water use efficiency improvements
- Water Use Efficiency – the program will increase “real water” conservation by reducing water waste which otherwise would be irrecoverable.
- Watershed Management – the program will contribute to the watershed-wide Salinas Valley Plan which coordinates water resource solutions within the Salinas Valley Watershed.

D. Outreach, Community Involvement and Acceptance

The District has been in close communication and has coordinated with its key partners in this program, the U.S. Army and California State University Monterey Bay. Both entities are strongly supportive of this application (see Appendix 4) as a grant resulting from the application would enable them to better manage their water use and lower their operating costs.

No adverse third party impacts are expected from the project. The project will create indirect third-party benefits through lowering of water demands, lessening pressure on groundwater resources and the need for development of expensive alternative resources.

Until the project is bid for construction, actual labor force composition is unknown. However based on District experience, it is highly likely that local Monterey County based contractors will be utilized. In addition, the Board of Directors mandate that the local contractors and/or the local labor force, which may be upwards of 50 personnel to be employed for the aggregate of the program components, shall perform of a minimum of 50% of the work. In addition, the District will require contractors to demonstrate training opportunities being provided through contract execution.

References

American Water Works Association/California Department of Water Resources, Water Audit and Leak Detection Guidebook No. 5. August, 1986.

California Urban Water Conservation Council, BMP Cost & Savings Study. July, 2000

Marina Coast Water District, 2001 Urban Water Management Plan, December, 2001.

David B. Meza



Marina Coast Water District
11 Reservation Road, Marina, CA 93933
(831) 582-2665

QUALIFICATIONS

Mr. Meza has over eighteen years of diversified engineering and technical management experience involving planning, design, construction management, construction cost estimates, value engineering, structural & civil engineering, supervision, project coordination of municipal water supply and distribution, wastewater collection and transport, recycled water, highways, bridges, and other civil engineering projects.

WORK HISTORY

1999-2002

District Engineer, Marina Coast Water District

Manages the District's engineering department and serves as the District's chief engineer.

Performs long and short range planning to anticipate and prepare for District engineering and capital improvement construction needs.

Manages large scale or complex projects; reviews, signs and stamps all project improvement plans, job specifications and various permits.

1998-1999

Resident Engineer, Caltrans

Responsible for ensuring the contract is built according to plans and specifications.

Served as Resident Engineer for the Salinas River Bridge Retrofit (\$7M), Hurricane Emergency Slide Repair (\$1.5M), Carmel River Mitigation Bank Project (\$1.2M), Castroville Roadway Rehabilitation Project (\$1.2M) and other minor and emergency highway projects.

1994-1998

Structure Representative, Caltrans

Responsible for the contract administration of the major structure portions of the highway projects.

Responsibilities include managing and directing several inspectors and engineers, review / approve design calculations and shop drawings, supervised testing of materials, prepare contract change orders, and coordinate technical review with other Caltrans engineering offices. Served as Structure Representative for the Bay Porter Project (\$11M), San Juan Baptista Widening (\$0.5M), San Juan Baptista Soundwalls (\$0.4M), the Hollister Bypass (\$14M), and the Gorda Retaining Wall (\$6M). Provided technical expertise for the Castroville Widening Project, Julia Pheiffer Viaduct Project, Toro Creek Bridge Replacement, Carmel River Bridge Replacement, and the Willow Springs Sidehill Viaduct.

1993-1994

Environmental Division, Caltrans

Provided technical expertise to planners and engineers on environmental laws and regulations.

Provided training workshops for planners and engineers regarding the environmental process.

1991-1993

Office of Project, Planning and Design, Caltrans

Lead and facilitated value engineering studies.

Assisted with the development of the value engineering program for Caltrans.

1987-1991

Division of Clean Water Program, State Water Resources Control Board

Managed the Innovative and Technologies Program

Assistant Project Manager for planning and design of wastewater treatment and collection projects.

1984-1987

Sacramento Design Branch, Caltrans

Designed highways and bridges.

EDUCATION & LICENSES

1980-1984

BS in Civil Engineering, CSU, Sacramento

California Registered Professional Civil Engineer, No. 44083

Appendix 3

Table 3-1

MCWD DESALINATION FACILITY ESTIMATED CAPITAL AND O&M COSTS

	ITEM	ANNUAL COST 2002-2003 (\$)
A	Debt Service for Capital Funding (20 yrs)	\$248,857
B	Energy Costs (Off-Peak operation -- 11hrs/day M-F, 24hrs/day Sa,Su)	\$75,000
C	Personnel - 1 FT operator	\$50,000
D	Supplies/Maintenance/Equipment	\$45,000
E	Membrane replacement every 5 years at \$100,000 per replacement)	\$20,000
F	Mitigation Monitoring Program (Fugro and Kinetic Labs) - Requirement Complete	\$0
G	Lab Personnel for ongoing water quality monitoring (estimate 50% of total lab time)	\$45,000
H	Contract Testing	\$1,300
I	Engineering Consultants	\$5,000
	TOTAL	\$490,157
	Desalinated Water Production(af/yr)	250
	ESTIMATED PRODUCTION COST (\$/AF)	\$1,961

Appendix 3

Table 3-2

Pressure Reducing Valves

A. Construction Cost		Material Cost		Labor Cost		Total
		Count	Unit Cost	Extended Cost	Unit Cost	Extended Cost
2 1/2" & 8" PRV & Box		8	\$ 20,000.00	\$ 160,000.00	\$ 5,400.00	\$ 43,200.00
3" & 12" PRV & Box		2	\$ 25,000.00	\$ 50,000.00	\$ 5,400.00	\$ 10,800.00
8" PRV & Box		10	\$ 15,000.00	\$ 150,000.00	\$ 5,400.00	\$ 54,000.00
12" PRV & Box		2	\$ 25,000.00	\$ 50,000.00	\$ 8,700.00	\$ 17,400.00
16" PRV & Box		1	\$ 35,000.00	\$ 35,000.00	\$ 8,700.00	\$ 8,700.00
subtotals				\$ 445,000.00		\$ 134,100.00
						\$ 579,100.00

Gate Valves

A. Construction Cost		Material Cost		Labor Cost		Total Cost
		Count	Unit Cost	Extended Cost	Unit Cost	Extended Cost
Valves						
6 inch	15	\$	400.00	\$ 6,000.00	\$ 700.00	\$ 10,500.00
8 inch	36	\$	500.00	\$ 18,000.00	\$ 700.00	\$ 25,200.00
10 inch	8	\$	800.00	\$ 6,400.00	\$ 700.00	\$ 5,600.00
12 inch	5	\$	1,000.00	\$ 5,000.00	\$ 3,500.00	\$ 17,500.00
16 inch	3	\$	4,000.00	\$ 12,000.00	\$ 8,000.00	\$ 24,000.00
20 inch	3	\$	6,500.00	\$ 19,500.00	\$ 10,000.00	\$ 30,000.00
20 inch (very difficult location)	2	\$	6,500.00	\$ 13,000.00	\$ 20,000.00	\$ 40,000.00
Roadway Repair				\$ 79,900.00		\$ 152,800.00
subtotal						\$ 252,700.00
Construction Subtotal						\$ 831,800.00
Contingency						10.00% \$ 83,180.00
Construction Total						\$ 914,980.00
B. Environmental						1.00% \$ 9,149.80
C. Engineering						5.00% \$ 45,749.00
D. Admin & Legal						1.00% \$ 9,149.80
Total PRV and Valve Cost						\$ 979,028.60

Appendix 3

Table 3-4

Distribution Line Replacement

A. Construction Cost

	Length	Material Cost		Labor Cost		Total Cost
		Unit Cost	Extended Cost	Unit Cost	Extended Cost	
6" Pipe Bwt Tank and EG	1000	\$ 35.00	\$ 35,000.00	\$ 35.00	\$ 35,000.00	\$ 70,000.00
Hayes Park, Line 1	40	\$ 40.00	\$ 1,600.00	\$ 45.00	\$ 1,800.00	\$ 3,400.00
Hayes Park, Line 2	40	\$ 40.00	\$ 1,600.00	\$ 45.00	\$ 1,800.00	\$ 3,400.00
Hayes Park, Line 3	40	\$ 40.00	\$ 1,600.00	\$ 45.00	\$ 1,800.00	\$ 3,400.00
Hayes Park, Line 4	40	\$ 40.00	\$ 1,600.00	\$ 45.00	\$ 1,800.00	\$ 3,400.00
Hayes Park, Line 5	40	\$ 40.00	\$ 1,600.00	\$ 45.00	\$ 1,800.00	\$ 3,400.00
Stillwell Park, Line 1	40	\$ 40.00	\$ 1,600.00	\$ 45.00	\$ 1,800.00	\$ 3,400.00
Stillwell Park, Line 2	40	\$ 40.00	\$ 1,600.00	\$ 45.00	\$ 1,800.00	\$ 3,400.00
Stillwell Park, Line 3	40	\$ 40.00	\$ 1,600.00	\$ 45.00	\$ 1,800.00	\$ 3,400.00
Stillwell Park, Line 4	40	\$ 40.00	\$ 1,600.00	\$ 45.00	\$ 1,800.00	\$ 3,400.00
Stillwell Park, Line 5	40	\$ 40.00	\$ 1,600.00	\$ 45.00	\$ 1,800.00	\$ 3,400.00
Preston Park, Line 1	40	\$ 40.00	\$ 1,600.00	\$ 45.00	\$ 1,800.00	\$ 3,400.00
Preston Park, Line 2	40	\$ 40.00	\$ 1,600.00	\$ 45.00	\$ 1,800.00	\$ 3,400.00
Preston Park, Line 3	40	\$ 40.00	\$ 1,600.00	\$ 45.00	\$ 1,800.00	\$ 3,400.00
Preston Park, Line 4	40	\$ 40.00	\$ 1,600.00	\$ 45.00	\$ 1,800.00	\$ 3,400.00
Preston Park, Line 5	40	\$ 40.00	\$ 1,600.00	\$ 45.00	\$ 1,800.00	\$ 3,400.00
Preston Park, Line 6	40	\$ 40.00	\$ 1,600.00	\$ 45.00	\$ 1,800.00	\$ 3,400.00
Schoonover, Line 1	40	\$ 40.00	\$ 1,600.00	\$ 45.00	\$ 1,800.00	\$ 3,400.00
Schoonover, Line 2	40	\$ 40.00	\$ 1,600.00	\$ 45.00	\$ 1,800.00	\$ 3,400.00
Schoonover, Line 3	40	\$ 40.00	\$ 1,600.00	\$ 45.00	\$ 1,800.00	\$ 3,400.00
subtotal			\$ 65,400.00		\$ 69,200.00	
Construction Subtotal					\$ 138,400.00	\$ 134,600.00
Contingency					10.00%	\$ 13,460.00
Construction Total						\$ 148,060.00
B. Environmental					5.00%	\$ 7,403.00
C. Engineering					10.00%	\$ 14,806.00
D. Admin & Legal					5.00%	\$ 7,403.00
Total Pipe Cost						\$ 177,672.00

Appendix 3

Table 3-5

ARMY METER COSTS

A. Construction Cost	Material Cost			Labor & Equipment Cost			Total
	Count	Unit Cost	Extended Cost	Weeks	Cost/Week	Extended Cost	
Army Housing 3/4"	1538	\$ 150.00	\$ 230,700.00	39	\$ 16,440.00	\$ 641,160.00	\$ 871,860.00
Construction Subtotal							\$ 871,860.00
Contingency						10.00%	\$ 87,186.00
Construction Total							\$ 959,046.00
B. Environmental						1.00%	\$ 9,590.46
C. Engineering						5.00%	\$ 47,952.30
D. Admin & Legal						1.00%	\$ 9,590.46
Total Army Meter Cost							\$ 1,026,179.22
Average Cost per Meter							\$ 667.22

Appendix 3

Table 3-6

CSUMB METER COSTS

A. Construction Cost

A. Construction Cost		Material Cost		Labor & Equipment Cost			
	Count	Unit Cost	Extended Cost	Weeks	Cost/Week	Extended Cost	Total
Schoonover Park							
Eddy Court 1" Meters	4	\$ 120.00	\$ 480.00	0.4	\$ 16,440.00	\$ 6,576.00	\$ 7,056.00
Eddy Court 2" Meters	5	\$ 400.00	\$ 2,000.00	0.5	\$ 16,440.00	\$ 8,220.00	\$ 10,220.00
Barbee Court 1" Meters	4	\$ 120.00	\$ 480.00	0.4	\$ 16,440.00	\$ 6,576.00	\$ 7,056.00
Barbee Court 2" Meters	5	\$ 400.00	\$ 2,000.00	0.5	\$ 16,440.00	\$ 8,220.00	\$ 10,220.00
White Court 1" Meters	3	\$ 120.00	\$ 360.00	0.3	\$ 16,440.00	\$ 4,932.00	\$ 5,292.00
White Court 2" Meters	2	\$ 400.00	\$ 800.00	0.2	\$ 16,440.00	\$ 3,288.00	\$ 4,088.00
Combs Court 1" Meters	4	\$ 120.00	\$ 480.00	0.4	\$ 16,440.00	\$ 6,576.00	\$ 7,056.00
Combs Court 2" Meters	6	\$ 400.00	\$ 2,400.00	0.6	\$ 16,440.00	\$ 9,864.00	\$ 12,264.00
Warrelman Court 1" Meter	4	\$ 120.00	\$ 480.00	0.4	\$ 16,440.00	\$ 6,576.00	\$ 7,056.00
Warrelman Court 2" Meter	4	\$ 400.00	\$ 1,600.00	0.4	\$ 16,440.00	\$ 6,576.00	\$ 8,176.00
Thomas Court 1" Meter	3	\$ 120.00	\$ 360.00	0.3	\$ 16,440.00	\$ 4,932.00	\$ 5,292.00
Thomas Court 2" Meter	3	\$ 400.00	\$ 1,200.00	0.3	\$ 16,440.00	\$ 4,932.00	\$ 6,132.00
Henson Court 1" Meter	5	\$ 120.00	\$ 600.00	0.5	\$ 16,440.00	\$ 8,220.00	\$ 8,820.00
Henson Court 2" Meter	4	\$ 400.00	\$ 1,600.00	0.4	\$ 16,440.00	\$ 6,576.00	\$ 8,176.00
Sherman Court 1" Meter	2	\$ 120.00	\$ 240.00	0.2	\$ 16,440.00	\$ 3,288.00	\$ 3,528.00
Sherman Court 2" Meter	6	\$ 400.00	\$ 2,400.00	0.6	\$ 16,440.00	\$ 9,864.00	\$ 12,264.00
Holovits Court 1" Meter	4	\$ 120.00	\$ 480.00	0.4	\$ 16,440.00	\$ 6,576.00	\$ 7,056.00
Holovits Court 2" Meter	4	\$ 400.00	\$ 1,600.00	0.4	\$ 16,440.00	\$ 6,576.00	\$ 8,176.00
Scott Court 1" Meter	4	\$ 120.00	\$ 480.00	0.4	\$ 16,440.00	\$ 6,576.00	\$ 7,056.00
Scott Court 2" Meter	4	\$ 400.00	\$ 1,600.00	0.4	\$ 16,440.00	\$ 6,576.00	\$ 8,176.00
Jackson Court 1" Meter	2	\$ 120.00	\$ 240.00	0.2	\$ 16,440.00	\$ 3,288.00	\$ 3,528.00
Jackson Court 2" Meter	3	\$ 400.00	\$ 1,200.00	0.3	\$ 16,440.00	\$ 4,932.00	\$ 6,132.00
Bundage Court 1" Meters	3	\$ 120.00	\$ 360.00	0.3	\$ 16,440.00	\$ 4,932.00	\$ 5,292.00
Bundage Court 2" Meters	5	\$ 400.00	\$ 2,000.00	0.5	\$ 16,440.00	\$ 8,220.00	\$ 10,220.00
Devers Court 1" Meters	11	\$ 120.00	\$ 1,320.00	1.1	\$ 16,440.00	\$ 18,084.00	\$ 19,404.00
Wedemeyer Court 1" Meters	10	\$ 120.00	\$ 1,200.00	1.0	\$ 16,440.00	\$ 16,440.00	\$ 17,640.00
Chennault Court 1" Meter	3	\$ 120.00	\$ 360.00	0.3	\$ 16,440.00	\$ 4,932.00	\$ 5,292.00
Fredricks Park 1" Meters	52	\$ 120.00	\$ 6,240.00	5.2	\$ 16,440.00	\$ 85,488.00	\$ 91,728.00
Fredricks Park 2" Meters	31	\$ 400.00	\$ 12,400.00	3.1	\$ 16,441.00	\$ 50,967.10	\$ 63,367.10
Sub-Total			\$ 46,960.00			\$ 328,803.10	
Sub-Meter Costs							
Cost for Units	1153	\$ 1,000.00					\$ 1,153,000.00
Residential Meter Subtotal							\$ 1,528,763.10
Landscape							
2 inch	17	\$ 450.00	\$ 7,650.00	1.7	\$ 16,440.00	\$ 27,948.00	\$ 35,598.00
3 inch	1	\$ 850.00	\$ 850.00	0.1	\$ 16,440.00	\$ 1,644.00	\$ 2,494.00
Landscape Sub-Total			\$ 8,500.00			\$ 29,592.00	
Construction Subtotal							\$ 1,588,855.10
Contingency						10.00%	\$ 158,885.51
Construction Total							\$ 1,723,540.61
B. Environmental						1.00%	\$ 17,235.41
C. Engineering						10.00%	\$ 172,354.06
D. Admin & Legal						1.00%	\$ 17,235.41
Total CSUMB Meter Cost							\$ 1,930,365.48
Average Cost Per Meter							\$ 1,674.21

Total No. of Units	1153
Total Bldgs	194
Land Area, acres	20.32
Bldg/acres	9.55

Appendix 3

Table 3-7

METER SAVINGS

	Unit	Current Avg. Ann Use per Unit	Metering Conservation Factor (1)	Annual Savings (af/vr)	Ammortized Ann. Project Cost (2)	Cost/af savings	Alternative Water Cost per AF	Benefit Cost Ratio
SF Units								
Army Units	1538	0.33	0.25	126.9	\$61,550.81	\$ 485.1	\$ 1,961.00	4.04
CSUMB Units	1153	0.25	0.25	72.1	\$115,807.42	\$ 1,607.0	\$ 1,961.00	1.22
				198.9				

(1) BMP Cost and Savings Study, CUWCC, 2000

(2) \$667/ Army unit and \$1,674/ CSUMB unit over 20 years at 6%

GATE VALVES AND PRVS SAVINGS

	Unit	Leak Size inches	Unit Loss Rate GPM at 70 psi	Annual Losses (savings) in AF	Annual Cost (3)	Cost/AF Savings	Alternative Water Cost per AF	Benefit Cost Ratio
Gate Valves	72	0.01	8.67	1007.1	\$132,317	\$ 131.4	\$ 1,961.00	14.93
PRVs	23	0.01	8.67	321.7	\$78,008	\$ 242.5	\$ 1,961.00	8.09
				1328.8				

(3) \$979,028 over 20 years at 6%

LINE REPLACEMENT SAVINGS

	Unit	Leak Size Length/Width	Unit Loss Rate GPM at 70 psi	Losses (savings) in AF	Annual Cost (3)	Cost/AF Savings	Alternative Water Cost per AF	Benefit Cost Ratio
East Garrison Section	3	1", 1/32"	5.95	28.8	\$14,157	\$ 491.8	\$ 1,961.00	3.99
Hayes Park, Line 1	1	1", 1/32"	5.95	9.6	\$14,157	\$ 1,475.3	\$ 1,961.00	1.33
Hayes Park, Line 2	1	1", 1/32"	5.95	9.6	\$14,157	\$ 1,475.3	\$ 1,961.00	1.33
Hayes Park, Line 3	1	1", 1/32"	5.95	9.6	\$14,157	\$ 1,475.3	\$ 1,961.00	1.33
Hayes Park, Line 4	1	1", 1/32"	5.95	9.6	\$14,157	\$ 1,475.3	\$ 1,961.00	1.33
Hayes Park, Line 5	1	1", 1/32"	5.95	9.6	\$14,157	\$ 1,475.3	\$ 1,961.00	1.33
Stillwell Park, Line 1	1	1", 1/32"	5.95	9.6	\$14,157	\$ 1,475.3	\$ 1,961.00	1.33
Stillwell Park, Line 2	1	1", 1/32"	5.95	9.6	\$14,157	\$ 1,475.3	\$ 1,961.00	1.33
Stillwell Park, Line 3	1	1", 1/32"	5.95	9.6	\$14,157	\$ 1,475.3	\$ 1,961.00	1.33
Stillwell Park, Line 4	1	1", 1/32"	5.95	9.6	\$14,157	\$ 1,475.3	\$ 1,961.00	1.33
Stillwell Park, Line 5	1	1", 1/32"	5.95	9.6	\$14,157	\$ 1,475.3	\$ 1,961.00	1.33
Preston Park, Line 1	1	1", 1/32"	5.95	9.6	\$14,157	\$ 1,475.3	\$ 1,961.00	1.33
Preston Park, Line 2	1	1", 1/32"	5.95	9.6	\$14,157	\$ 1,475.3	\$ 1,961.00	1.33
Preston Park, Line 3	1	1", 1/32"	5.95	9.6	\$14,157	\$ 1,475.3	\$ 1,961.00	1.33
Preston Park, Line 4	1	1", 1/32"	5.95	9.6	\$14,157	\$ 1,475.3	\$ 1,961.00	1.33
Preston Park, Line 5	1	1", 1/32"	5.95	9.6	\$14,157	\$ 1,475.3	\$ 1,961.00	1.33
Preston Park, Line 6	1	1", 1/32"	5.95	9.6	\$14,157	\$ 1,475.3	\$ 1,961.00	1.33
Schoonover, Line 1	1	1", 1/32"	5.95	9.6	\$14,157	\$ 1,475.3	\$ 1,961.00	1.33
Schoonover, Line 2	1	1", 1/32"	5.95	9.6	\$14,157	\$ 1,475.3	\$ 1,961.00	1.33
Schoonover, Line 3	1	1", 1/32"	5.95	9.6	\$14,157	\$ 1,475.3	\$ 1,961.00	1.33

211.1

(4) \$177,672 over 20 years at 6%

Appendix 4

Board Resolution

Resolution No. 2002-xx
Resolution of the Board of Directors
Marina Coast Water District
Approving a Grant Application with the
Department of Water Resources for a
Urban Water Conservation Capital Outlay Grant

February 27, 2002

RESOLVED by the Board of Directors ("Directors") of the Marina Coast Water District ("District"), at a regular meeting duly called and held on February 27, 2002 at the business office of the District, 11 Reservation Road, Marina, California as follows:

WHEREAS, the District was notified on January 10, 2002 by the Department of Water Resources (DWR) that DWR was accepting Proposition 13 grant applications by qualifying water agencies through 3:00 p.m. on March 1, 2002; and,

WHEREAS, the District qualifies to compete for Proposition 13 grant funding as the District has completed and filed with the DWR a 2001 Urban Water Management Plan, and the District has previously identified projects that would qualify for Proposition 13 grant funding; and,

WHEREAS, District staff and consultants prepared a grant application that has been discussed with the Department of Water Resources, and supported by the California State University Monterey Bay and the U.S. Army.

NOW, THEREFORE, BE IT RESOLVED, that the Board of Directors of the Marina Coast Water District does hereby approve the Application between the California Department of Water Resources and the Marina Coast Water District for a Urban Water Conservation Capital Outlay Grant under the Urban Water Conservation Program (Proposition 13), and authorizes and directs the General Manager to execute an agreement on behalf of the Marina Coast Water District, to execute requests for disbursement of State funds, and to take all other actions necessary to fully perform the Marina Coast Water District's obligations with DWR.

PASSED AND ADOPTED on February 27, 2002, by the Board of Directors of the Marina Coast Water District by the following roll call vote:

Ayes:
Directors_____

Noes:
Directors_____

Absent:
Directors _____

Abstained:
Directors _____

Tom Moore, President

ATTEST:

Michael D. Armstrong, Secretary

CERTIFICATE OF SECRETARY

The undersigned Secretary of the Board of the Marina Coast Water District hereby certifies that the foregoing is a full, true and correct copy of Resolution No. 2002-xx adopted February 27, 2002.

Michael D. Armstrong, Secretary

Appendix 5

Letters of Support

January 30, 2002

Mr. Mike Armstrong
General Manager
Marina Coast Water District
11 Reservation Road
Marina CA 93933

Support for District's Proposition 13 Capital Grant Application

Dear Mike:

I'm pleased to provide this letter of support for the District's application to the State Department of Water Resources for a capital grant to help rehabilitate the water system on the former Fort Ord, upon which we depend. As you know, the system left by the Army was not built to current municipal standards and is in a state of disrepair.

The District's intent to provide meters to housing owned by California State University Monterey Bay will be of great help in managing water service, lowering water supply costs and implementing conservation efforts. Additionally, the metering of landscape uses will allow the University to carefully monitor and manage landscape water application.

Receipt of grant funds would help relieve the University system of a portion of the capital expense of refurbishing the infrastructure at CSUMB and in turn, allow us to focus our resources on our primary mission of education. In these lean budget times, such help is greatly needed and appreciated.

CSUMB is willing to commit \$250,000 for the metering project in support of this grant proposal.

Please let me know if there is more we can do to help your pursuit of grant funds.

Sincerely,

CSUMB

Table A-4

METER SAVINGS		Estimated Conservation Savings and Benefit					
		Current		Cost Analysis		Ammortized	Alternative
		Avg. Ann Use	Metering	Annual	Ann. Project		
		Unit	Conservation	Savings	Cost (2)	Cost/af savings	Water Cost
		per Unit	Factor (1)	(af/yr)			per AF
SF Units							
Army Units	1538	0.33	0.25	126.9	\$61,550.81	\$ 485.1	\$ 1,961.00
CSUMB Units	1153	0.25	0.25	72.1	\$115,807.42	\$1,607.0	\$ 1,961.00

(1) BMP Cost and Savings Study, CUWCC, 2000

(2) \$667/ Army unit and \$1,674/ CSUMB unit over 20 years at 6%

GATE VALVES AND PRVS SAVINGS

	Unit	Leak Size inches	Unit Loss Rate GPM at 70 psi	Annual Losses (savings) in AF	Annual Cost (3)	Cost/AF Savings	Alternative Water Cost per AF
Gate Valves	72	0.01	8.67	1007.1	\$132,317	\$ 131.4	\$ 1,961.00
PRVs	23	0.01	8.67	321.7	\$78,008	\$ 242.5	\$ 1,961.00

(3) \$979,028 over 20 years at 6%

LINE REPLACEMENT SAVINGS

	Ea	Leak Size Length,Width	Unit Loss Rate GPM at 70 psi	Losses (savings) in AF	Annual Cost (3)	Cost/AF Savings	Alternative Water Cost per AF
East Garrison Section	3	1", 1/32"	5.95	28.8	\$14,157	\$ 491.8	\$ 1,961.00
Hayes Park, Line 1	1	1", 1/32"	5.95	9.6	\$14,157	\$1,475.3	\$ 1,961.00
Hayes Park, Line 2	1	1", 1/32"	5.95	9.6	\$14,157	\$1,475.3	\$ 1,961.00
Hayes Park, Line 3	1	1", 1/32"	5.95	9.6	\$14,157	\$1,475.3	\$ 1,961.00
Hayes Park, Line 4	1	1", 1/32"	5.95	9.6	\$14,157	\$1,475.3	\$ 1,961.00
Hayes Park, Line 5	1	1", 1/32"	5.95	9.6	\$14,157	\$1,475.3	\$ 1,961.00
Stillwell Park, Line 1	1	1", 1/32"	5.95	9.6	\$14,157	\$1,475.3	\$ 1,961.00
Stillwell Park, Line 2	1	1", 1/32"	5.95	9.6	\$14,157	\$1,475.3	\$ 1,961.00
Stillwell Park, Line 3	1	1", 1/32"	5.95	9.6	\$14,157	\$1,475.3	\$ 1,961.00
Stillwell Park, Line 4	1	1", 1/32"	5.95	9.6	\$14,157	\$1,475.3	\$ 1,961.00
Stillwell Park, Line 5	1	1", 1/32"	5.95	9.6	\$14,157	\$1,475.3	\$ 1,961.00
Preston Park, Line 1	1	1", 1/32"	5.95	9.6	\$14,157	\$1,475.3	\$ 1,961.00
Preston Park, Line 2	1	1", 1/32"	5.95	9.6	\$14,157	\$1,475.3	\$ 1,961.00
Preston Park, Line 3	1	1", 1/32"	5.95	9.6	\$14,157	\$1,475.3	\$ 1,961.00
Preston Park, Line 4	1	1", 1/32"	5.95	9.6	\$14,157	\$1,475.3	\$ 1,961.00
Preston Park, Line 5	1	1", 1/32"	5.95	9.6	\$14,157	\$1,475.3	\$ 1,961.00
Preston Park, Line 6	1	1", 1/32"	5.95	9.6	\$14,157	\$1,475.3	\$ 1,961.00
Schoonover, Line 1	1	1", 1/32"	5.95	9.6	\$14,157	\$1,475.3	\$ 1,961.00
Schoonover, Line 2	1	1", 1/32"	5.95	9.6	\$14,157	\$1,475.3	\$ 1,961.00
Schoonover, Line 3	1	1", 1/32"	5.95	9.6	\$14,157	\$1,475.3	\$ 1,961.00

(4) \$177,672 over 20 years at 6%

Estimated Conservation Savings and Benefit Cost Analysis

4.04
1.22

14.93
8.09

[illegible]

<u>Project</u>	<u>Materials</u>	<u>Labor</u>	<u>Other</u>	Project <u>Total</u>
1.0 Additional Leak Detection		\$75,000		\$75,000
2.0 Metering				
2.1 Residential Meters				
2.1.1 Army	\$230,700	\$641,160		
2.1.2 CSUMB	\$46,960.00	\$328,803	\$1,153,000	
2.2 Landscape	\$8,500	\$29,592		
2.3 Environ., Engr.and Admin.			\$273,957	
2.4 Construction Contingency			\$243,872	
subtotals	\$286,160	\$999,555	\$1,670,829	\$2,956,544
3.0 Pressure Reduction				
3.1 Pressure Reduction Valves	\$445,000	\$134,100		
3.2 Gate Valves	\$79,900	\$152,800		
3.3 Environ., Engr.and Admin.			\$64,049	
3.4 Construction Contingency			\$83,180	
subtotals	\$524,900	\$286,900	\$147,229	\$959,029
4.0 Distribution Line Replacement	\$65,400	\$69,200		
4.1 Environ., Engr.and Admin.			\$29,612	
4.2 Construction Contingency			\$13,460	
subtotals	\$65,400	\$69,200	\$43,072	\$177,672
Grand Total			\$491,402	\$4,168,245

Marina Coast Water District

Appendix 1

Preliminary Plans and Specifications



MARINA COAST WATER DISTRICT

**METER INSTALLATION FOR CALIFORNIA
STATE UNIVERSITY MONTEREY BAY AND
THE DEPARTMENT OF THE ARMY**

Bidding Requirements
Conditions of the Contract
Technical Specifications

Month/Year

CONTRACT DOCUMENTS FOR
METER INSTALLATION

CONTRACT _____

Marina Coast Water District
11 Reservation Road
Marina, California 93933

Board of Directors

T. Moore, President
E. Randle
D. Brown
K. Nishi

Submitted _____
Registered Engineer (if required and must be same as person who prepared plans)

Approved _____
District Engineer

BID AND CONTRACT DOCUMENTS
FOR
BID/CONTRACT NO.

PROJECT: Meter Installation

FOR: MARINA COAST WATER DISTRICT
 11 RESERVATION ROAD
 MARINA, CA 93933

Summary of Contents

Section**Page**

I. Invitation to bidders

Pre-bid Conference and Site Inspection
Bid Opening (Due date and Time)

II. Information to bidders

- A. Bid Requirements and Conditions
- B. Award of Contract
- C. Execution of Contract
- D. Notice to Proceed
- E. Failure to Execute Contract
- F. Prevailing Wage Requirements
 and Penalties for Non-compliance
- G. Disclosure of Bid Information
- H. Notice of Completion

III. Bid Forms

- A. Bid Form
- B. Schedule of Bid Items
- C. Contractor's License Certification
- D. Affirmative Information Statement
- E. Designation of Subcontractors
- F. Bidder's Bond
- G. Designation of Insurance Agent or Broker
- H. Payment Bond
- I. Performance Bond
- J. Non-Collusion Declaration
- K. Stop Work Notice
- L. Prevailing Wage Statement

IV. Construction Contract

V. Special Instructions

- Monthly progress payments with 10% retention are applicable to this project.

VI. Technical Specifications

VII. Plans

- The plans for this project can be purchased for \$_____ from:

Marina Coast Water District
Attn: David B. Meza, P.E.
11 Reservation Road
Marina, CA 93933

Reference: "Plan Description. (_____ sheets.)

I. INVITATION TO BIDDERS
FOR THE ATTACHED CONSTRUCTION PROJECT ENTITLED:
METER INSTALLATION PROJECT

Bids will be received by the Marina Coast Water District (herein after referred to as 'MCWD') at 11 Reservation Road, Marina CA 93933, on _____, for the performance of the work described in the Bid and Contract Documents on file at the above location.

All Bid and Contract Documents, including the bid forms, shall be obtained from the Marina Coast Water District. No deposit is required.

The plans for this project can be purchased for \$ _____ from MCWD, Attn. _____

Payment will be made as described in the Bid and Contract Documents.

BONDS (See Part II, paragraph A13, regarding surety standards):

A Bid Bond is required.

A Payment Bond and a Performance Bond are required within ten (10) working days after bid acceptance.

The time of completion for this Contract shall be 200 working days.

The right is reserved, as the interest of MCWD may require, to reject any or all bids, to waive any informality in bids, and to accept or reject any items of the bid. If the Contractor's bid is accepted, the Purchasing Agent will execute the Contract for and on behalf of the, as governed by Public Contract Code 22030 through 22045.

The bidder and any of his subcontractors must be licensed as a _____ Contractor with the Contractors State License Board of the state of California Department of Consumer Affairs. Bids will not be considered from contractors not licensed as a _____ Contractor unless they hold a specialty license for the specific classification(s) to be performed.

Public Works projects exceeding \$1,000.00 require the payment of the general prevailing rate of per them wages, copies of which are on file at the above address. (Labor Code 1770, et seq.)

A pre-bid conference and site inspection will be held at MCWD offices on _____ at _____.

ATTENDANCE AT PRE-BID CONFERENCE IS MANDATORY FOR BID SUBMITTAL {Optional, discuss with design engineer}

The contact person assigned to this project is: _____

SECTION II. INFORMATION TO BIDDERS

A. BID REQUIREMENTS AND CONDITIONS

This project shall be constructed and administered in accordance with the Bid and Contract Documents issued for this project and any addendum or written modification to the Bid and Contract Documents.

Attention is also directed to Section IV, "Construction Contract" of these Bid and Contract Documents.

1. Interpretation

Should any discrepancies or omissions be found in the bid specifications, or doubt as to their meaning, the bidder shall notify the contact person in writing at once. The contact person will send written instruction or addenda to all bidders. Marina Coast Water District (MCWD) shall not be held responsible for oral interpretations. Questions must be received at least ninety-six (96) hours (four working days) before bid opening. All addenda issued shall be incorporated into the contract.

2. Bid Forms

This bid package includes a Standard Bid Form which when filled out and executed shall be submitted as the bidder's proposal. Bids not presented on the Standard Form shall be disregarded.

In the case of discrepancy between words and numbers, the words, unless obviously incorrect, shall govern. All bids shall give the prices proposed in figures in the spaces provided, and shall be signed by the Bidder, who shall fill out all the blanks in the Proposal herein provided.

All prices and notations must be printed in ink or typewritten. No erasures are permitted. Errors may be crossed out and corrections printed in ink or typewritten nearby and must be initialed in ink by person signing bid.

3. Investigation of Site

Each bidder shall study the specifications and investigate the site of the work, take measurements and obtain any information necessary for bid submittal. By the submission of this bid, the bidder certifies that, if awarded the contract. There will be no claim made against MCWD based upon ignorance of local conditions or misunderstanding of the provisions of the specifications.

4. Filing of Bids

All Bids must be filed with MCWD prior to the time specified, and at the location specified. Each Proposal must be submitted on enclosed forms, in a sealed envelope, with bid/contract number, closing date and time noted on the outside of the envelope.

5. Withdrawal of Bids

Any Bids may be withdrawn at any time prior to the time the Bids are opened by the Owner.

6. Modifications or Corrections

Modifications or corrections to the Bids, which are received after the bid due date and time, will be rejected.

7. Disqualification of Bidders

Except as provided in paragraph 2, page 2 bids may be rejected if they show any alterations, erasures, alterations of form, additions, deletions, or irregularities of any kind. Bids that, in the opinion of MCWD, contain obvious errors may be rejected.

8. Regulations and Standards

Where reference is made herein to the "Standard Specifications" such reference shall mean the Marina Coast Water District Standard Specifications dated July 1995. The MCWD Standard Specifications incorporate the State of California, Department of Transportation Standard Specifications by reference. All materials and work shall be in full accordance with the rules and requirements of the Occupational Safety and Health Administration (OSHA); National Electrical Code (NEC); National Fire Codes published by the National Fire Protection Association (NFPA); California Administrative code (CAC); Uniform Building Code (UBC); Uniform Plumbing Code (UPC); State of California and other applicable federal, state, and local laws and regulations. These specifications shall not be construed to permit work not conforming to these requirements. The regulations shall govern where they require higher standards or conflict with the specifications. Rulings and interpretations of the enforcing agencies shall be considered a part of these specifications if commonly known to the trade prior to submittal of bids. All regulations and standards shall be the latest publications unless governing authorities require otherwise. In addition, the entire installation shall be in accord with the best practices available in the industry, and shall present a neat, high-quality appearance upon completion.

9. Substitutions of Materials or Equipment

MCWD reserves the right to accept or reject substitutions for materials and/or equipment as specified herein. If your bid is contingent upon MCWD acceptance of such substitutes, you must explain the details on a separate sheet and submit it with your bid. Bidders who submit bids which are silent on substitutions shall be obligated to provide materials and equipment which are exactly as specified in this bid document; after bid award, the contractor may propose substitutions of equal products, but MCWD shall not be obligated to accept such substitutions.

10. Material Guarantee

Before any Contract is executed, the Bidder may be required to furnish a complete statement of the origin, composition and manufacture of any or all materials to be used in the prosecution of the Contract, together with samples, if required. Said samples may be subjected to tests provided for in the Bid and Contract Documents to determine their quality and fitness for this work.

11. Tie Bids

All other factors being equal, the contract may be awarded to the local vendor or, if neither or both are local vendors, it may be awarded by the flip of a coin in the presence of witnesses, or the entire bid may be rejected and re-bid.

12. Time for Acceptance

Bids are subject to acceptance at any time within 45 calendar days after opening, unless otherwise stipulated in bid.

13. Bid Guarantee

Each bid shall be accompanied by cash, a certified or cashier's check, or a bidder's bond in the sum of not less than ten percent (10%) of the total dollar aggregate of the bid. Said checks or bond shall be made payable to Marina Coast Water District. A Bidder's Bond form is attached to the Bid Documents as Exhibit "F."

14. Standards for Liability Insurance and Sureties

All coverages, except surety, shall be issued by companies, which hold a current A. M. Best policyholder's alphabetic and financial size category rating of not less than A- :VII, or a company of equal financial stability that is approved by the MCWD Insurance/Risk Manager.

Surety coverage providers must meet the following standards:

- a. Either a California Admitted Surety OR a current Treasury Listed Surety (Federal Register) to its specified dollar limitation.

AND

Either a current A.M. Best B rated Surety OR a current Standard and Poors (S & P) rating of B B.

OR

- b. An admitted surety insurer which complies with the provisions of the code of Civil Procedure, Section 995.660*.
- c. In lieu of "a" and "b", a company of equal financial size and stability that is approved by the MCWD's Insurance/Risk Manager.

*California Code of Civil Procedure Section 995.660 in summary, states that an admitted surety must provide: 1) the original, or a certified copy of instrument authorizing the person who executed the bond to do so; 2) a certified copy of the certificate of Authority issued by the Insurance Commissioner, 3) a certificate from County Clerk of Monterey County that Certificate of Authority has not been surrendered, revoked, canceled, annulled or suspended; 4) a financial statement showing the assets and liabilities of the insurer at the end of the quarter calendar year, prior to 30 days next preceding the date of execution of the bond.

15. Contract Bonds - Time Limit for Submission

The Contractor shall file with the owner on the approved forms the surety bonds requested in the amounts and for the purposes noted below, duly executed by a reputable surety company satisfactory to the MCWD. Contractor shall pay all premiums and costs thereof and incidental thereto at no additional cost to MCWD. The bonds shall provide that all alterations, time extensions, extra and additional work and other changes to the contract may be made without securing consent of the surety or sureties.

EACH BOND SHALL BE SIGNED BY BOTH THE CONTRACTOR AND THE SURETIES.

The "PAYMENT BOND FOR PUBLIC WORKS" shall be in the amount of one hundred percent (100%) of the contract price as determined from the prices in the bid, and shall inure to the benefit of persons performing labor or furnishing materials in connection with the work of the proposed contract. This bond shall be maintained in full force and effect until all work under this contract is completed and accepted by the MCWD, and until all claims for materials and labor have been paid. If required, a Payment Bond form is attached as Exhibit "H." Payment Bonds are mandatory for contracts in excess of \$25,000 (California Civil Code §247.)

The "PERFORMANCE BOND" shall be in an amount of one hundred percent (100%) of the contract price as determined from the prices in the bid, and shall be conditioned as to insure the faithful performance by the contractor of all work under this contract. It shall also insure the replacing of, or making acceptable, any defective materials or faulty workmanship. If required, a Performance Bond form is attached as Exhibit I.

Should any surety or sureties be deemed unsatisfactory at any time by the MCWD notice will be given Contractor to that effect, the Contractor shall forthwith substitute a new surety or sureties satisfactory to MCWD. No further payment shall be deemed due or will be made under the Contract until the new sureties qualify and are accepted by MCWD.

All alterations, time extensions, extra and additional work, and other changes authorized by the Specifications, or any part of the Contract, may be made without securing consent of the surety or sureties on the contract bond.

16. Procurement Policy Relating to Chlorofluorocarbons and other Ozone Depleting Substances

In response to growing world-wide concern over the use of chlorofluorocarbons (CFC's), the MCWD shall procure supplies and equipment manufactured by companies that have adopted a policy committed to the reduction and elimination of the use in products and processes of chlorofluorocarbons and any other substance that has been identified by the Montreal Protocol and the EPA as contributing to the erosion of the earth's ozone layer. Said policy shall include time lines for the reduction and elimination of these emissions, which are at least as stringent as the following:

- 90% reduction by 1995
- 100% reduction by 1997

Manufacturers bidding to provide products to MCWD must demonstrate that they are in compliance with the demonstrate that they are in compliance with the MCWD policy as defined above. Said documentation shall consist of the submittal of a written policy statement.

17. Prevention of Sexual and Racial Harassment

The contractor shall ensure and maintain a working environment free of personal harassment and intimidation not only among the Contractor's forces but also between the Contractor's forces and MCWD employees and members of the public at all project sites and in all MCWD facilities at which the contractor's forces are assigned to work.

- Conduct that creates an intimidating, hostile, or offensive working environment is prohibited. This includes, but is not limited to the following:
- Verbal harassment. e.g., epithets, derogatory comments or slurs;
- Physical harassment. e.g., assault, impeding or blocking movement gestures, or any physical interference with normal work or movement;
- Visual forms or harassment. e.g., derogatory posters, letters, poems, graffiti, cartoons or drawings.

Unwelcome and unwanted sexual advances, requests for sexual favors and other verbal or physical conduct of a sexual nature, for example, constitutes sexual harassment which is prohibited.

It is the responsibility of the contractor to:

- Inform their employees and subcontractors that behavior which creates an intimidating, hostile, or offensive working environment, is unacceptable;
- Create a working environment that is free from harassment, and;
- Take corrective action to stop unacceptable behavior/conduct.

In the event that the Contractor/Contractor work forces fail to comply with this provision, the Contractor/Contractor work forces may be subject to remedies as are provided in this contract or at law.

B. AWARD OF CONTRACT

1. The Contract may be awarded to the lowest responsible bidder. In determining lowest responsible bidder careful consideration shall be given to each item of bid. MCWD reserves the right to reject any or all Bids.

2. Acceptance of Bid

A written acceptance mailed, or otherwise furnished, to the successful bidder within the time for acceptance results in a binding contract without further action by either party. The contract shall be interpreted, construed and given effect in all respects according to the laws of the state at California.

C. EXECUTION OF CONTRACT

The contract shall be signed by the successful bidder and returned, together with the contract bonds, within 10 working days, after the bidder has received the contract for execution.

D. NOTICE TO PROCEED

The Contractor shall deliver into the hands of MCWD, the required Insurance Certificate and other required Documents, within 10 working days after MCWD has signed the contract. When all requirements have been fulfilled, MCWD will issue a Notice to Proceed to the contractor. Working days shall be counted beginning on the fifteenth calendar day after MCWD has signed the contract.

The Contractor will deliver to the Owner, prior to the Notice to Proceed, the following Documents:

1. Certificate of Insurance
2. A list of material suppliers, including those of subcontractors.
3. Excavation Plan
4. Traffic Control Plan
5. Completed Application for City of Marina and Monterey County Encroachment Permits. (Contractor shall submit completed permit applications and pay permit fees)
6. Project Schedule and Staging Plan
7. Names and telephone numbers of the superintendents, foreman, and personnel who can be reached in case of emergency on a twenty-four (24) hours a day, seven (7) days per week basis.
8. Other documents as may be required for Notice to Proceed.

E. FAILURE TO EXECUTE CONTRACT

Failure of the bidder to execute the contract and furnish bonds within 10 working days after the bidder has received the contract for execution, shall be just cause for the annulment of the award, the retention of the Bid Guarantee amount, and any other legal remedy available to the MCWD.

F. PREVAILING WAGE REQUIREMENTS AND PENALTIES FOR NON-COMPLIANCE

As stated in Part IV, Section 8, of this Invitation to Bid, Contractors are required to pay, and ensure that their subcontractors pay, the prevailing wage as determined by the Director of the California Department of Industrial Relations (State of California, Labor Code, Sections 1770-1776).

Contractors must also comply with certain apprenticeship obligations set forth in the California Labor Code, Section 1777.5 as a minimum; at least one apprentice must be employed for each five journey-level workers on the job in a craft or classification.

In addition, Contractors must maintain and furnish certified payroll records to MCWD as requested.

If the contractor fails to supply certified payroll records within ten calendar days after they are requested or fails to otherwise comply with Labor Code Sections 1770-1776, the MCWD will charge the Contractor \$25.00 per calendar day per worker for each day that he remains in noncompliance.

If the Contractor fails to comply with apprenticeship requirements, the MCWD will withhold \$50.00 per calendar day of noncompliance upon notification by the State of California Department of Industrial Relations. The noncompliant Contractor will also be denied the right to bid on public works projects for one year.

G. DISCLOSURE OF BID INFORMATION

After award, all bids shall be open to public inspection. The MCWD assumes no responsibility for the confidentiality of information offered in a bid.

H. NOTICE OF COMPLETION

In order to protect the MCWD against claims by unpaid subcontractors or material suppliers, the MCWD records a Notice of Completion and holds final payment to the Contractor until the 30-day period for filing Stop Notices has passed. See Part IV, paragraph 4, for more information.

III. Bid Form for: Meter Installation Project

- A. Bid Form
- B. Schedule to Bid Items
- C. Contractor's License Certification
- D. Affirmative Action Statement
- E. Designation of Subcontractors
- F. Bidder's Bond
- G. Designation of Insurance Agent or Broker
- H. Payment Bond
- I. Performance Bond
- J. Non-Collusion Bond
- K. Stop Work Notice
- L. Prevailing Wage Statement

**BID FORM
FOR
CONSTRUCTION PROJECTS**

In response to your District's notice inviting bids for:

PROJECT TITLE: Meter Installation Project

BID/CONTRACT NO: _____

the following is submitted:

FOR THE TOTAL SUM OF \$ _____ computed from lump sum shown on the attached Schedule of Bid Items, the undersigned hereby proposes and agrees that if this proposal is accepted, this Document will constitute a Contract with the Marina Coast Water District to furnish all labor, material, tools, equipment, transportation, and all incidental work and services required to complete all items of work shown on the contract Drawings, and as stated in the Contract Specifications and Documents.

All work shall conform to the lines, grades and dimensions shown on said drawings and shall be done in accordance with the Contract Specifications and MCWD General Conditions specifically referenced and to accept this proposal, the Purchasing Agent will sign the acceptance section below.

By signing below, the bidder agrees that the representations made herein are made under penalty of perjury pursuant to the California Business and Professions Code, Section 7028.15 (e).

COMPANY NAME: _____

SIGNED: _____

NAME PRINTED/TYPED: _____

TITLE: _____

DATE: _____

ADDRESS: _____

TELEPHONE: _____

CONTRACTOR'S LICENSE NO: _____

CONTRACTOR'S LICENSE EXPIRATION DATE: _____

CONTRACTOR'S LICENSE CLASSIFICATION: _____

SCHEDULE OF BID ITEMS

FOR

PROJECT TITLE: Meter Installation Project

BID/CONTRACT NO: _____

ADDENDA:

If addendum is made to this bid, please acknowledge receipt. Bidder acknowledges receipt of Addendum (if needed) # ____, ____, ____, ____.

Schedule A: Army Meters

ITEM NO.	DESCRIPTION OF WORK	ESTIMATED QUANTITY	UNIT	UNIT PRICE	AMOUNT
1	Mobilization	1	LS		
2	Clearing and Grubbing	1	LS		
3	Furnish and Install 5/8x3/4 Meters, Box, Plumbing	1583	EA		
Bid Total:					
Name of Bidder or Contractor:					

Schedule B: CSUMB Meters

ITEM NO.	DESCRIPTION OF WORK	ESTIMATED QUANTITY	UNIT	UNIT PRICE	AMOUNT
1	Mobilization	1	LS		
2	Clearing and Grubbing	1	LS		
4	Furnish and Install 1" Meters, Box, Plumbing	118	EA		
5	Furnish and Install 2" Meters, Box, Plumbing	99	EA		
6	Furnish and Install 3" Meters, Box, Plumbing	1	EA		
7	Furnish and Install Sub-Metering for Buildings with 4 or less Residential Units	82	EA		
8	Furnish and Install Sub-Metering for Buildings with 5 or more Residential Units	112	EA		
Bid Total:					
Name of Bidder or Contractor:					

NOTE: AWARD SHALL BE "ALL OR NONE" or by "individual item(s)".

All prices quoted shall include all delivery costs and applicable taxes and permits.

COMPANY NAME: _____

AUTHORIZED SIGNATURE: _____

DATE: _____

SUBMIT WITH BID

CONTRACTOR'S LICENSE CERTIFICATION

FOR BID/CONTRACT NO.

The names of all persons as principals interested in the forgoing bid are as follows:

IMPORTANT NOTICE: If bidder or other interested person is a corporation, give legal name of corporation, state where incorporated and names of the president and secretary thereof; if a partnership, give name of the firm, also names of all individual co-partners composing firm; if bidder or other interested person is an individual, give first and last names in full. If a bidder is a joint venture, supply the above information for each joint venture partner. All bidders must hold an active California contractor's license at time of bid deposit.

To ensure compliance with the California Business and Professions Code, Sections 7058.5 and 7058.6, include a copy of the following documents with your bid if the project includes 100 square feet or more of surface area asbestos containing materials' and is "asbestos-related work" as defined by Section 6501.8 of the Labor Code:

- A current certificate to engage in asbestos-related work issued by the California Contractor's State License Board.
- Proof of current registration with the Department of Industrial Relations, Division of occupational Safety and Health

Licensed in accordance with an act providing for the registration of contractors in California.

Bidder's license number is: _____

License classification is: _____

The license expiration date is: _____

The representations made herein are made under penalty of perjury.

Company name:

Sign and date here:

(Signature of Bidder)

(Date)

Contractors License Certification

For Bid/Contract No:

NOTE:

1. If a bidder is a corporation, the legal name of the corporation shall be set forth above together with the signature of the officer or officers authorized to sign contracts on behalf of the corporation.
2. A licensed contractor shall not submit a bid to a public agency unless his or her contractor's license number appears clearly on the bid, the license expiration date is stated, and the bid contains a statement that the representations made herein are made under penalty of perjury. Any bid not containing this information, or a bid containing information which is subsequently proven false, shall be considered nonresponsive and shall be rejected by the public agency.

AFFIRMATIVE ACTION STATEMENT

SUBMIT WITH BID

On behalf of _____, I hereby affirm our organization practices equal opportunity in the hiring, training and promotion of personnel. No discrimination in any phase of employment is made on the basis of race, color, creed, national origin or gender.

Project Title: _____

Bid/Contract No.: _____

Company Name: _____

Contractor's Signature: _____

Date: _____

DESIGNATION OF SUBCONTRACTORS

BID/CONTRACT NO.
SUBMIT WITH BID

Pursuant to the provisions of Sections 4100 to 4113, inclusive, of the Public Contract Code of the State of California, every Bidder shall in his bid set forth:

a) The name and location of the place of business of each subcontractor who will perform work or labor or render service to the Bidder in or about the work, in an amount in excess of one-half (1/2) of one percent (1%) of the Bidder's total bid. For any portion of the work not so designated Contractor agrees that he is fully qualified to perform that portion himself, and that he shall perform that portion himself. The successful Bidder shall not, without the consent of the District, either:

1. Substitute any person as subcontractor in place of the subcontractor designated in the original bid.
2. Permit any subcontractor to be assigned or transferred or allow it to be performed by anyone other than the original subcontractor listed in the bid.
3. Sublet or subcontract any portion of the work in excess of one-half (1/2) of one percent (1%) of the total bid as to which his original bid did not designate a subcontractor.

NAME OF
SUBCONTRACTOR

LOCATION
(address, city, zip)

DIVISION
OF WORK

COMPANY NAME: _____

By: _____

Bidder's Signature

Date: _____

BIDDER'S BOND

BID NO:

SUBMIT WITH BID

KNOW ALL MEN BY THESE PRESENTS:

That we, _____

as Principal, and _____,
as Surety, are held and firmly bound unto the Marina Coast Water District (MCWD), in the penal sum of ten percent (10%) of the total aggregate amount of the bid of the Principal above named, submitted by said Principal to MCWD for the work described below, for the payment of which sum in lawful money of the United States, well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

The condition of this obligation is such that a bid to county for certain construction generally described as follows:

_____ PROJECT
11 Reservation Road
Marina, CA 93933

for which bids are to be opened on _____, at _____, has been submitted by Principal to MCWD:

(Copy here the exact description of work, including location, from bid form.)

NOW, THEREFORE, if the aforesaid Principal shall not withdraw said bid within the period specified therein after the opening of the same, or if no period be specified, within sixty (60) working days after said opening, and shall within the period specified therefore, or if no period be specified, within twenty (20) calendar days after the prescribed forms are presented to him for signature, enter into a written contract with, in the prescribed form, in accordance with the bid as accepted, and file the two bonds with one to guarantee faithful performance and the other to guarantee payment for labor and materials, as required by law, or in the event of the withdrawal of said bid within the period specified or the failure to enter into such contract and give such bonds within the time specified, if the Principal shall pay the County the difference between the amount specified in said bid and the amount for which the may procure the required work and/or supplies, if the latter amount be in excess of the former, together with all costs incurred by the County in again calling for bids, then the above obligation shall be void and of no effect, otherwise to remain in full force and virtue.

Bidder's Bond (Continued)

Bid No:

SUBMIT WITH BID

Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract on the call for bids, or to the work to be performed thereunder, or the specifications accompanying the same, shall in anywise affect its obligation under this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of said contract or the call for bids, or to the work, or to the specifications.

In the event suit is brought upon said bond by County and judgment is recovered, the Surety shall pay all costs incurred by MCWD in such suit, including a reasonable attorney's fee to be fixed by the court.

IN WITNESS WHEREOF, we have hereunto set our hands and seals on this _____
day of _____, 20____.

_____(Seal)

_____(Seal)

_____(Seal)

Principal

_____(Seal)

_____(Seal)

_____(Seal)

Surety

Address: _____

NOTE: Signatures of those executing for surety must be properly acknowledged.

DESIGNATION OF INSURANCE AGENT OR BROKER

BID/CONTRACT NO:

SUBMIT WITH BID

It is proposed that the following insurance agent/broker and insurance company will provide policies of insurance or insurance certificates as required by the bid documents.

Insurance Agent or Broker: _____

Street: _____

City, State and Zip: _____

Telephone: _____

Name of Insurance Company
Providing Coverage _____

Best's Key Rating Guide of at least A VII? Yes _____ No _____

It is proposed that the following bonding agent or surety will provide payment and performance bonds as required by the bid documents.

Bonding Agent or Broker: _____

Street: _____

City, State and Zip: _____

Telephone: _____

Name of Surety Company
Providing Bonds: _____

- | | | |
|----|--|--------------------|
| 1. | Admitted in California? | Yes _____ NO _____ |
| | <i>OR</i> | |
| | Current Treasury Listed Surety (Federal Register)? | Yes _____ NO _____ |
| | <i>AND</i> | |
| | Current A.M. Best B or better rating? | Yes _____ NO _____ |
| | <i>OR</i> | |
| | Current Standard and Poors Rating of BB or better? | Yes _____ NO _____ |

Designation of Insurance Agent or Broker (Continued)

Bid/Contract No:

Submit with Bid

2. (in lieu of 1)

An admitted surety insurer which complies with the provisions of the code of Civil Procedure, Section 995.660*.

California Code of Civil Procedure Section 995.660 in summary, states that an admitted surety must provide 1) the original, or a certified copy of instrument authorizing the person who executed the bond to do so; 2) a certified copy of the Certificate of Authority issued by the Insurance Commissioner, 3) a certificate from county Clerk of Monterey County that Certificate of Authority has not been surrendered, revoked, canceled, annulled or suspended; 4) a financial statement showing the assets and liabilities of the insurer at the end of the quarter calendar year, prior to 30 days next preceding the date of the execution of the bond.

OR

3. In lieu of 1 and 2, a company of equal financial size and stability that is approved by the MCWD Insurance/Risk Manager.

By signing below, the bidder certifies that:

The above comply with the MCWD standards for liability insurers and sureties pursuant to Section II, Part A, paragraph 14 of these bid documents: Yes _____ NO _____. If ? No? , your bid is subject to rejection.

COMPANY NAME: _____

BY: _____
(Bidder's signature)

DATE: _____

PAYMENT BOND FOR PUBLIC WORKS

BID NO: _____

KNOW ALL MEN BY THESE PRESENTS: That

WHEREAS, the Purchasing Agent of the Marina Coast Water District, and _____ (hereinafter designated as "Principal") have entered into an agreement for the furnishing of all materials, labor, services and transportation, necessary, convenient and proper to

Bid/Purchase Order No. _____

which said Agreement dated _____, 20____ and all of the Contract Documents attached to or forming a part of said Agreement, are hereby referred to and made a part hereof; and

WHEREAS, said Principal is required by Chapter 5 (commencing at Section 3225) and Chapter 7 (commencing at Section 3247), Title 15, Part 4, Division 3 of the California Civil Code to furnish a bond in connection with said contract;

NOW THEREFORE, we, the Principal and _____ as surety, are held and firmly bound unto the Public Entity in the penal sum of:

Dollars (\$ _____), lawful money of the United States of America for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITIONS OF THIS OBLIGATION IS SUCH that if said Principal, his or its subcontractors, heirs, executors, administrators, successors, or assigns, shall fail to pay any of the persons named in Section 3181 of the California Civil Code, or amounts due under the Unemployment Insurance Code with respect to work or labor performed by any such claimant, the Surety will pay for the same, in an amount not exceeding the sum hereinabove specified, and also, in case suit is brought upon this bond, a reasonable attorney's fee to be fixed by the court.

This bond shall inure to the benefit of any of the persons named in Section 3181 of the California Civil Code, so as to give a right of action to such persons or their assigns in any suit brought upon this bond.

It is further stipulated and agreed that the Surety on this bond shall not be exonerated or released from the obligation of this bond by any change, extension of time for performance, addition, alteration or modification in, to, or any contract, plans, specifications, or agreement pertaining or relating to any scheme or work of improvement hereinabove described or pertaining to or relating to the furnishing of labor, materials, or equipment therefor, nor by any change or modification of any terms of payment or extension of the time for any payment pertaining or relating to any scheme or work of improvement hereinabove described, nor by any rescission or attempted rescission of the contract, agreement or bond,

nor by any conditions precedent or subsequent in the bond attempting to limit the right of recovery of claimants otherwise entitled to recover under any such contract or agreement or under the bond, nor by any fraud practiced by any person other than the claimant seeking to recover on the bond and that this bond be construed most strongly against the Surety and in favor of all persons for whose benefit such bond is given, and under no circumstances shall Surety be released from liability to those for whose benefit such bond has been given, by reason of any breach or contract between the owner or Public Entity and original contractor or on the part of any obligee named in such bond, but the sole conditions of recovery shall be that claimant is a person described in Section 3110 or 3112 of the California Civil Code, and has not been paid the full amount of his claim and that Surety does hereby waive notice of any such change, extension of time, addition, alteration or modification herein mentioned.

IN WITNESS WHEREOF two identical counterparts of this instrument, each of which shall for all purposes be deemed an original thereof, have been duly executed by he Principal and Surety above named on the _____ day of _____, 20 _____.

_____(Seal)

_____(Seal)

_____(Seal)

Principal

_____(Seal)

_____(Seal)

_____(Seal)

Surety

Address: _____

NOTE: Signatures of those executing for surety must be properly acknowledged.

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: That

WHEREAS, the Marina Coast Water District (MCWD), has awarded to:

(hereinafter designated as "Principal") a contract for:

Bid/Contract No: _____; and

WHEREAS, said Principal is required under the terms of said contract to furnish a bond for the faithful performance of said contract,

NOW, THEREFORE, we, the Principal and

as surety, are held and firmly bound unto the Marina Coast Water District (hereinafter called "MCWD"),
in the penal sum of:

(\$ _____) lawful money of the United States, for the payment of which sum well and truly
to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally,
firmly by these presents.

The condition of this obligation is such that if the above bounden Principal, his/her or its heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions and agreements in the said contract and any alteration thereof made as therein provided, on his/her or their part, to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify and save harmless County, its officers, agents, and employees, as therein stipulated, then this obligation shall become null and void; otherwise it shall be and remain in full force and effect.

And the said Surety for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the work to be performed thereunder or the specifications accompanying the same shall in any wise affect its obligations on this bond, and it does hereby waive notice of any change, extension of time, alteration or additions to the terms of the contract or to the work or to the specifications.

In the event suit is brought upon this bond by MCWD and judgment is recovered, Surety shall pay all costs incurred by MCWD in such suit, including reasonable attorney's fees to be fixed by the Court.

Performance Bond (continued)
Bid No: 00-C1

IN WITNESS WHEREOF two identical counterparts of this instrument, each of which shall for all purposes be deemed an original thereof, have been duly executed by Principal and Surety above named, on the _____ day of _____, 20_____.

_____(Seal)

_____(Seal)

_____(Seal)

Principal

_____(Seal)

_____(Seal)

_____(Seal)

Surety

Address: _____

NOTE: Signatures of those executing for surety must be properly acknowledged.

NON-COLLUSION DECLARATION TO BE EXECUTED BY BIDDER

BID NO:

SUBMIT WITH BID

I, _____, am the
(name)

_____ of _____,
(Position Title) (Company)

the party making the foregoing bid that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid; and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

I declare under penalty of perjury under the laws of the
State of California that the foregoing is true and correct:

Signature

Date

STOP NOTICE INFORMATION

BID NO:

SUBMIT WITH BID

PROJECT NAME: _____

CONTRACTOR? S NAME AND ADDRESS: _____

Reference: California Civil Code, Division 3, Part 4, Title 15, Chapter 4

The following is provided for the information of contractors, subcontractors and suppliers of labor, materials, equipment, and services under MCWD contracts, and is not intended as legal advice. Advice of legal counsel should be obtained to ensure compliance with legal requirements relating to public works stop notices.

WHERE TO FILE: All original stop notices and preliminary-20 day notices (if required by California Civil Code 53098) must be filed with the Marina Coast Water District, 11 Reservation Road, Marina, CA 93933.

STOP NOTICE CONTENTS: See California Civil Code 3103. written notice, signed and verified by the claimant and including information such as the kind of labor, equipment, materials or service furnished or agreed to be furnished by the claimant; the name of the person/entity to or for whom the same was done or furnished; the amount in value of that already done or furnished and/or agreed to be done or furnished. Blank stop Notice forms are commercially available.

WHO MAY SERVE STOP NOTICE: See California Code 53181. All persons furnishing labor, materials, equipment or services to the job (except the original contractor) and persons furnishing provisions, provender or other supplies.

HOW THE STOP NOTICE IS SERVED: See California Code S3103. Served by personal service, registered mail, or certified mail.

TIME FOR SERVICE: See California Civil Code 3184. Stop notices must be served before the expiration of 30 days after the recording of a Notice of Completion (sometimes referred to as a Notice of Acceptance) or Notice of Cessation, if such notice is recorded or if no Notice of Completion or Notice of Cessation is recorded, 90 days after actual completion or cessation.

Stop Notice Information (continued)
Bid No: 00-C1

NOTICE OF PUBLIC ENTITY (OWNER): See California Civil code 3185. Provided that a stop notice claimant has paid to the Clerk of the Board of Supervisors the sum of \$2.00 at the time of filing a stop notice, the Clerk shall provide each stop notice claimant with notice of filing of a Notice of Completion or after the cessation of labor has been deemed a completion of a public work or after the acceptance of completion, whichever is later, to each stop notice claimant, by personal service or registered or certified mail.

RELEASE OF STOP NOTICE: See California Civil Code 3196 and following. A stop notice can be released if the original contractor files a corporate surety bond with the Clerk of the Board of Supervisors, in the amount of 125% of the stop notice claim. Alternatively, the original contractor may file an affidavit pursuant to California Civil Code S3198, stating objections to the validity of the stop notice. A counter affidavit may be filed by the claimant pursuant to 53200 and a summary legal proceeding may be held pursuant to 3201 and following, to determine the validity of the stop notice. If no counter affidavit is filed, the stop notice funds shall be released. Alternatively, the Stop Notice claimant may file a Release in a form which substantially complies with California Civil Code 3262.

STOP NOTICE LAWSUIT: See California Civil Code 53210 through 3214. These sections provide that a stop notice is perfected only by the filing of a lawsuit. A lawsuit must be filed no sooner than 10 days after service of a stop notice and no later than 90 days after the expiration of the time for filing stop notices. Notice of suit must be given to the Clerk of the Board within 5 days after commencement. The Court has the discretionary right to dismiss the lawsuit if it is not brought to trial within two years.

I HEREBY ACKNOWLEDGE THAT I RECEIVED AND READ THE ABOVE STOP NOTICE INFORMATION AND IF I AM AWARDED THIS CONTRACT, I AGREE TO INCLUDE A COPY OF THIS PAGE IN ALL SUBCONTRACTS AND CONTRACTS FOR LABOR, MATERIALS, EQUIPMENT, AND SERVICES THAT I ENTER INTO FOR THIS PROJECT:

Bidder's Signature: _____ Date: _____

Bidder's Name and Title (Print): _____

PREVAILING WAGE STATEMENT

BID/CONTRACT NO:

SUBMIT WITH BID

If awarded the contract, we and our subcontractors shall pay all the workers we assign to the project not less than the prevailing wage as determined by the state of California, Director of industrial Relations in compliance with Section IV, paragraph W of this Invitation to Bid. We are aware that the contractor shall be penalized for non-compliance by either the contractor or his subcontractor(s).

In addition, we are informed of the following:

Copies of the prevailing wage rates are on file at:

Marina Coast Water District
11 Reservation Road
Marina, CA 93933

or

State of California Department of Industrial Relations
Division of Labor Statistics and Research
455 Golden Gate Avenue, 5th Floor, Room 5184
San Francisco, CA 94104
(415) 703-4281

The successful bidder shall be required to post the prevailing wage determinations at each job site.

Each contractor and subcontractor shall keep accurate payroll records showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per them wages paid to each journeyman, apprentice, worker or other employee employed by him or her in connection the public work.

Certified copies of such payroll records must be furnished to the State or Marina Coast Water District upon request.

By signing below, the bidder certifies that he shall comply with the prevailing wage laws.

Company Name: _____

Contractor's Signature: _____

Date: _____

MARINA COAST WATER DISTRICT

CONSTRUCTION CONTRACT

CONTRACT NO:

This agreement is entered into this _____ 2001, between the Marina Coast Water District ("District") and ("Contractor"), a corporation, for the performance of certain work to be done by Contractor as set forth below.

THE DISTRICT AND THE CONTRACTOR DO HEREBY AGREE AS FOLLOWS:

1. WORK TO BE PERFORMED AND PERMITS

The Contractor shall furnish all labor, materials, supplies, tools and equipment necessary to perform the work under this Agreement (hereinafter "Work"). Contractor shall obtain and pay for any and all licenses, and OSHA permits if required, necessary to undertake and complete the Work. The Contractor shall obtain and pay for the required encroachment permits from the City of Marina and Seaside and Monterey County.

The Work shall be completed in a good and workmanlike manner, to the satisfaction of District and in strict accordance with the Contract documents, which are described to in paragraph 5 below. The Work is described in Attachment "A", Request for Proposals for the METER INSTALLATION PROJECT, all of which terms are hereby incorporated by reference.

2. COMPLETION DATE AND DAMAGES

Time is of the essence in this Agreement. Attention is directed to the provisions in Sections 8-1.03, "Beginning of Work," 8-1.06, "Time of Completion," 8-1.07, "Liquidated Damages," of the Standard Specifications and these special provisions.

The Contractor shall begin work within 15 calendar days after the contract has been approved by the District Engineer and authorized to represent the District. The work shall be diligently prosecuted to completion before the expiration of **200 working days** beginning on the fifteenth calendar day after District approval of the contract. Failure to complete the Work to the satisfaction of District by said date shall entitle District at its option to sue for damages, or retain and collect liquidated damages in the amount of **\$100 per day** for each calendar day thereafter. However, Contractor shall be entitled to extensions of time for delays caused by unusual and unforeseeable events beyond the control of Contractor or for delays caused by the negligent act or omission of District, and District shall not be entitled to liquidated damages for those delays but shall nonetheless be entitled to damages for each and every other day of delay. If Contractor is entitled to additional time to complete the Work under this provision, Contractor shall not be entitled extra payment for damages caused by such delays, unless caused by the negligent act or omission of District.

3. CONTRACT SUM

For completion of all Work to satisfaction of District, the District shall pay Contractor the sum of \$. The contract sum includes base bid, unit prices and additive alternatives if any.

Contractor warrants that he has made an independent investigation of the job site, including soil conditions at the job site, and other conditions that might affect the progress of the Work, and has satisfied himself as to those conditions, and agrees that he shall not be entitled to additional compensation for work required to overcome unanticipated site conditions. Any information furnished by District regarding conditions is for convenience of Contractor only, and District does not warrant the accuracy of such conditions.

4. PAYMENT

Monthly progress payments shall be paid to Contractor by the 22nd of the month for written requests submitted by the first day of the same month. District shall, however, retain 10% of the amount owing under each request, which retainage shall be included in the final payment owed Contractor. Whereas material suppliers and workmen may file a claim or lien for nonpayment of monies owed them, up to 30 days after recording a Notice of Completion, final payment shall not be made to Contractor until 35 days after District records a Notice of Completion. There shall be no interest owed for such retainage. However, District may pay Contractor before the expiration of said 35 days if Contractor provides District with satisfactory assurances that materials suppliers and workmen have been paid in full.

In accordance with Section 22300 of the Public Contracts Code, if the Contractor so requests, District shall pay to Contractor any monies withheld, if acceptable securities are deposited with the District or a state or federally chartered bank as escrow agent, equivalent to the amount being withheld.

5. CONTRACT DOCUMENTS

The documents which comprise the Contract between the parties consist of the invitation to bid, instructions to bidders and bid, this Agreement, the applicable portions of the "Public Agency Contract Provisions" attached hereto, the "List of Subcontractors" attached hereto, if any, the noncollusion affidavit, the plans and drawings, specifications, if any, any addenda and any other document referred to below, and any written modifications agreed to after execution of this Agreement.

6. CHANGES IN THE WORK

District may alter, add, or delete Work without penalty, if District determines such changes are reasonably necessary to complete the whole of the Work. Such additions or deletions shall be effected by written change orders signed by both parties and which describes the change, the price adjustment, and adjustment in time allowed for completion of the Work.

The price adjustment for the addition or deletion of work shall be based on the unit prices provided by the Contractor in the Contractor's bid. If the parties are unable to agree on an adjustment in completion time, or if they are in dispute about the price adjustment under this paragraph, this shall be resolved by binding arbitration. Arbitration shall be conducted by a three person panel, with each party choosing one, and the two choosing a third, or if necessary, the third being appointed by the Judge of the Superior Court. The panel shall decide the rules of arbitration.

7. WARRANTIES

Contractor warranties that the Work will be free of defects in materials or workmanship for a period of one year following acceptance of the completed Work by District.

8. PREVAILING WAGE RATES, ETC.

If the Contract sum exceeds \$1,000.00, then the Work under this Agreement is public work subject to Labor Code Section 1720 et seq., and Contractor shall comply with and be bound by all pertinent sections of the Labor Code beginning with Section 1720 regarding payment of prevailing wage rates, holiday and overtime pay, hiring of apprentices, workers compensation insurance, etc., all as set forth in the Public Agency Contract Provisions attached hereto, and which terms are hereby incorporated by reference.

9. INDEMNITY AND INSURANCE

Workers' Compensation Insurance - By his/her signature hereunder, Contractor certifies that he/she is aware of the provisions of Section 3700 of the California Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and he/she will comply with such provisions before commencing the performance of the work of this contract.

Indemnification - To the fullest extent permitted by law, Contractor shall indemnify and hold harmless and defend MCWD, its directors, officers, employees, or authorized volunteers, and each of them from and against:

- a. Any and all claims, demands, causes of action, damages, costs, expenses, losses or liabilities, in law or in equity, of every kind and nature whatsoever for, but not limited to, injury to or death of any person including MCWD and/or Contractor, or any directors, officers, employees, or authorized volunteers of MCWD or Contractor, and damages to or destruction of property of any person, including but not limited to, MCWD and/or Contractor or their directors, officers, employees, or authorized volunteers, arising out of or in any manner directly or indirectly connected with the work to be performed under this agreement, however caused, regardless of any negligence of MCWD or its directors, officers, employees, or authorized volunteers, except the sole negligence or willful misconduct or active negligence of MCWD or its directors, officers, employees, or authorized volunteers;
- b. Any and all actions, proceedings, damages, costs, expenses, penalties or liabilities, in law or equity, of every kind or nature whatsoever, arising out of, resulting from, or on account of the violation of any governmental law or regulation, compliance with which is the responsibility of Contractor;
- c. Any and all losses, expenses, damages (including damages to the work itself), attorneys' fees, and other costs, including all costs of defense, which any of them may incur with respect to the failure, neglect, or refusal of Contractor to faithfully perform the work and all of the Contractor's obligations under the contract. Such costs, expenses, and damages shall include all costs, including attorneys' fees, incurred by the indemnified parties in any lawsuit to which they are a party.

Contractor shall defend, at Contractor's own cost, expense and risk, any and all such aforesaid suits, actions or other legal proceedings of every kind that may be brought or instituted against MCWD or MCWD's directors, officers, employees, or authorized volunteers.

Contractor shall pay and satisfy any judgment, award or decree that may be rendered against MCWD or its directors, officers, employees, or authorized volunteers, in any such suit, action or other legal proceeding.

Contractor shall reimburse MCWD or its directors, officers, employees, or authorized volunteers, for any and all legal expenses and costs incurred by each of them in connection therewith or in enforcing the indemnity herein provided.

Contractor agrees to carry insurance for this purpose as set out in the specifications. Contractor's obligation to indemnify shall not be restricted to insurance proceeds, if any, received by the MCWD, or its directors, officers, employees or authorized volunteers.

Commercial General Liability and Automobile Liability Insurance - The Contractor shall provide and maintain the following commercial general liability and automobile liability insurance:

Coverage - Coverage for commercial general liability and automobile liability insurance shall be at least as broad as the following:

1. Insurance Services Office Commercial General Liability Coverage (Occurrence Form CG 0001)
2. Insurance Services Office Automobile Liability Coverage (Form CA 0001), covering Symbol 1 (any auto)

Limits - The Contractor shall maintain limits no less than the following:

1. General Liability - One million dollars (\$1,000,000) per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability Insurance or other form with a general aggregate limit or products-completed operations aggregate limit is used, either the general aggregate limit shall apply separately to the project/location (with the ISO CG 2503, or ISO CG 2504, or insurer's equivalent endorsement provided to the MCWD) or the general aggregate limit and products-completed operations aggregate limit shall be twice the required occurrence limit.
2. Automobile Liability - One million dollars (\$1,000,000) for bodily injury and property damage each accident limit.

Required Provisions - The general liability and automobile liability policies are to contain, or be endorsed to contain the following provisions:

1. The MCWD, its directors, officers, employees, or authorized volunteers are to be given insured status (via ISO endorsement CG 2010, CG 2033, or insurer's equivalent for general liability coverage) as respects: liability arising out of activities performed by or on behalf of the Contractors; products and completed operations of the Contractor; premises owned, occupied or used by the Contractor; or automobiles owned, leased, hired or borrowed by the Contractor. The coverage shall contain no special limitations on the scope of protection afforded to the MCWD, its directors, officers, employees, or authorized volunteers.

2. For any claims related to this project, the Contractor's insurance shall be primary insurance as respects the MCWD, its directors, officers, employees, or authorized volunteers. Any insurance, self-insurance, or other coverage maintained by the MCWD, its directors, officers, employees, or authorized volunteers shall not contribute to it.
3. Any failure to comply with reporting or other provisions of the policies including breaches of warranties shall not affect coverage provided to the MCWD, its directors, officers, employees, or authorized volunteers.
4. The Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.
5. Each insurance policy required by this clause shall state or be endorsed to state that coverage shall not be canceled by either party, except after thirty (30) days (10 days for non-payment of premium) prior written notice by U.S. mail has been given to the MCWD.

Such liability insurance shall indemnify the Contractor and his/her sub-contractors against loss from liability imposed by law upon, or assumed under contract by, the Contractor or his/her sub-contractors for damages on account of such bodily injury (including death), property damage, personal injury and completed operations and products liability.

The general liability policy shall cover bodily injury and property damage liability, owned and non-owned equipment, blanket contractual liability, completed operations liability, explosion, collapse, underground excavation and removal of lateral support.

The automobile liability policy shall cover all owned, non-owned, and hired automobiles.

All of the insurance shall be provided on policy forms and through companies satisfactory to the MCWD.

Deductibles and Self-Insured Retentions - Any deductible or self-insured retention must be declared to and approved by the MCWD. At the option of the MCWD, the insurer shall either reduce or eliminate such deductibles or self-insured retentions.

Acceptability of Insurers - Insurance is to be placed with insurers having a current A.M. Best rating of no less than A-:VII or equivalent or as otherwise approved by the MCWD.

Workers' Compensation and Employer's Liability Insurance - The Contractor and all sub-contractors shall insure (or be a qualified self-insured) under the applicable laws relating to workers' compensation insurance, all of their employees working on or about the construction site, in accordance with the "Workers' Compensation and Insurance Act," Division IV of the Labor Code of the State of California and any Acts amendatory thereof. The Contractor shall provide employer's liability insurance in the amount of at least \$1,000,000 per accident for bodily injury and disease.

Responsibility for Work - Until the completion and final acceptance by the MCWD of all the work under and implied by this Agreement, the work shall be under the Contractor's responsible care and charge. The Contractor shall rebuild, repair, restore and make good all injuries, damages, re-erections, and repairs occasioned or rendered necessary by causes of any nature whatsoever.

The Contractor shall provide and maintain builder's risk insurance (or installation floater) covering all risks of direct physical loss, damage or destruction to the work in the amount specified in the General Conditions, to insure against such losses until final acceptance of the work by the MCWD. Such insurance shall include¹ explosion, collapse, underground excavation and removal of lateral support. The MCWD shall be a named insured on any such policy. The making of progress payments to the Contractor shall not be construed as creating an insurable interest by or for the MCWD or be construed as relieving the Contractor or his/her subcontractors of responsibility for loss from any direct physical loss, damage or destruction occurring prior to final acceptance of the work by the MCWD.

The insurer shall waive all rights of subrogation against the MCWD, its directors, officers, employees, or authorized volunteers.

Evidences of Insurance - Prior to execution of the contract, the Contractor shall file with the MCWD a certificate of insurance (Acord Form 25-S or equivalent) signed by the insurer's representative. Such evidence shall include an original copy of the additional insured endorsement signed by the insurer's representative. Such evidence shall also include confirmation that coverage includes or has been modified to include Required Provisions 1-5.

The Contractor shall, upon demand of the MCWD, deliver to the MCWD such policy or policies of insurance and the receipts for payment of premiums thereon.

Sub-Contractors - In the event that the Contractor employs other contractors (sub-contractors) as part of the work covered by this agreement, it shall be the Contractor's responsibility to require and confirm that each sub-contractor meets the minimum insurance requirements specified above.

10. BONDS

Contractor shall provide a public works payment bond in the amount of 100% of the contract sum (Civil Code 3247 and 3248 require a payment bond of at least 100% of the contract sum for public works contracts in excess of \$25,000.00). Contractor shall provide satisfactory evidence to District that such bond has been procured prior to District's execution of this Agreement.

11. CONTRACTOR'S LICENSE

Contractor certifies that he possess a valid California Contractor's License, Class A, which qualifies him to do the Work under this Agreement.

12. SUBCONTRACTORS

Contractor certifies that the name of all subcontractors, if any, to be hired by Contractor are listed on the attached form entitled "List of Subcontractors", and will abide by the terms set forth therein, which terms are hereby incorporated by reference.

13. PERFORMANCE

Contractor agrees to promptly begin work in accordance with the terms of this agreement.

14. ASSIGNMENT

Neither this agreement nor any of the Contractor's rights under it shall be transferable or assignable without the express written consent of the District, but in the event of any assignment, all terms, conditions and obligations herein shall be binding upon the assignee.

15. DISPUTE RESOLUTION

If any dispute arises between the parties as to the proper interpretation or application of this agreement, the parties shall first seek to resolve the dispute in accordance with the terms of this paragraph, and the parties must proceed through arbitration as herein described before filing any court action.

- a. If any dispute arises, the parties shall first meet and confer in an attempt to resolve the matter between themselves. Each party shall make all reasonable efforts to provide to the other party all the information that the party has in its possession that is relevant to the dispute, so that both parties have all available information upon which to base a decision.
- b. If the dispute cannot be negotiated between the parties, the matter shall be submitted to arbitration. The parties shall jointly select a single arbiter, or, if the parties are unable to agree, they shall each select an arbiter and the matter shall be resolved by two arbiters. The two arbiters may, if they deem it appropriate and warranted and after consultation with the parties, themselves select a third arbiter. Any person selected as an arbiter shall be a qualified professional with expertise in the area that is subject of the dispute, unless the parties otherwise agree. Before commencement of the arbitration the parties may agree upon procedures for the arbitration; however, if the parties are unable to agree, then the arbitration shall be conducted in accordance with Code of Civil Procedure, Sections 1280, et seq., and to the extent that procedural issues are not there resolved, in accordance with the rules of American Arbitration Association. The decision of the arbiter or arbiters shall be binding. Discovery shall be available to the parties pursuant to Code of Civil Procedure, Section 1283.05.
- c. If, for any reason outside the control of a party requesting, in writing, the resolution of a dispute under this agreement, a dispute remains unresolved 61 days after delivery of the request to the other party, the party requesting resolution of the dispute may file suit for legal or equitable relief, including specific performance, if appropriate.

16. WAIVER OF RIGHTS

Any waiver, at any time, by either party hereto, of its rights with respect to a default or any other matter pertaining to this agreement shall not be deemed a waiver with respect to any other default or matter. None of the covenants or agreements herein contained can be waived except by written consent of the waiving party.

17. NOTICES

All notices and demands required under this agreement shall be deemed given by one party when delivered personally to the principal office of the other party; when FAXED to the other party; or five (5) days following mailing by US Postal service, first class postage prepaid, addressed to the other party as follows:

To MCWD: Marina Coast Water District

11 Reservation Road
Marina, California 93933

To CONTRACTOR:

The address to which notice may be sent may be changed by written notification of each party to the other as above provided.

18. SEVERABILITY

If any portion or provision of this agreement is found to be contrary to law or policy of the law or unenforceable in a court of competent jurisdiction, then the portion so found shall be null and void, but all other portions of the agreement shall remain in full force and effect.

19. PARAGRAPH HEADINGS

Paragraph headings are for convenience only and are not to be construed as limiting or amplifying the terms of this agreement in any way.

20. SUCCESSORS AND ASSIGNS

This agreement shall be binding on the assigns or successors to this agreement in the same manner as the original parties hereto.

21. INTEGRATED AGREEMENT

This agreement integrates and supersedes all prior and contemporaneous agreements and understandings concerning the subject matter herein. This agreement may be changed only by written amendment approved by all the parties' signature hereto.

22. NEGOTIATED AGREEMENT

This agreement has been arrived at through negotiation between the parties. Neither party is deemed the party that prepared the agreement within the meaning of Civil Code Section 1654.

23. ATTORNEY'S FEES

In the event of arbitration or litigation proceedings to enforce or interpret this agreement, the prevailing party shall be entitled to reasonable attorneys fees and costs, including the costs and fees of experts engaged for the proceedings, in addition to any other relief granted. A party who incurs fees or costs in enforcing a judgment or arbitration award on this agreement shall be entitled to collect such fees and costs from the party against whom the judgment is entered, including all fees and costs for post-judgment or post-award collection activities. The parties hereto waive the benefits of the Code of Civil Procedure Section 685.080. The parties specifically intend and agree that this provision shall survive any judgment on this agreement and shall not be extinguished by merger with the judgment or arbitration award. The

phrase "prevailing party" shall include a party who receives substantially the relief desired, whether by settlement, dismissal, summary judgment, or otherwise.

24. EXHIBITS

All exhibits referred to in this agreement and attached to this agreement are incorporated in this agreement by reference.

25. COUNTERPARTS

This agreement may be executed in counterparts, and each fully executed counterpart shall be deemed an original document.

26. PUBLIC CONTRACT PROVISIONS

The Contractor is responsible for his own compliance, and is responsible for all subcontractors' compliance, with all applicable sections of the California Labor Code regarding the payment of wages, the employment of apprentices, and hours of work, all as set forth in Section 1170 through Section 1815 of that Code. Those requirements are set forth below. The term "Contractor" shall hereafter refer to the Prime or General Contractor, with whom the District has contracted pursuant to this Agreement. The term subcontractor refers to those persons contracted with by the Contractor for the purpose of performing this Contract.

PAYMENT OF PREVAILING WAGES

- a. Pursuant to Sections 1774 and 1775 of the Labor Code, unless the contract price is under \$1,000.00, the Contractor and any subcontractor under him, shall pay not less than the general prevailing rate of per diem wages, including holiday and overtime pay, to all workmen employed in the execution of this Contract. Failure to so comply will result in a fine of \$25.00 per day per violation, and the obligation to compensate each such employee the difference between the wage actually paid and the prevailing wage applicable to that employee's craft.
- b. Pursuant to Section 1773.2 of the California Labor Code, the Marina Coast Water District has on file at its principal office, located at 11 Reservation Road, Marina, California 93933, copies of the prevailing rate of per diem wages for each craft, and classification or type of workman needed to execute the contract, and a copy shall be available to any interested party upon request.
- c. The Contractor shall obtain and post copies of the prevailing per diem wage rates at the job site during the term of this project.
- d. Pursuant to Labor Code Section 1776, the Contractor and each subcontractor shall keep accurate payroll records showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid each workman employed by him in connection with the public work. A certified copy of those records shall be made available upon request as required by Section 1776, to those persons listed in Section 1776, and on the conditions set forth therein. Failure to comply with these provisions shall result in a penalty of \$25.00 per calendar day as set forth in subsection (f).
- e. Pursuant to Section 1773.8 of the Labor Code, travel and subsistence payments shall also be paid to each workman needed to execute such work if such travel and subsistence payments are set

forth in the applicable collective bargaining agreements and filed with the Department of Industrial Relations thirty (30) days prior to the call for bids.

- f. Unless the Contract amount is under \$30,000 or will be completed in less than twenty (20) days (or if this Contract involves a specialty contractor under \$2,000 or less than 5 days) the Contractor shall comply with Section 1777.5 regarding the employment of registered apprentices upon public works by hiring, and by requiring that all subcontractors hire apprentices at the wage rate and ratio required, if at all, and by requiring the contribution of funds to appreciable crafts or trades as applicable under Section 1777.5.

HOURS OF LABOR

Pursuant to Sections 1810 through 1815 of the Labor Code, eight hours of labor constitutes a legal day's work, and work performed by employees of the Contractor or any subcontractor in excess of eight hours per day, and forty hours in any one week, shall be compensated at not less than one and one-half times their basic rate of pay. Violation of this condition shall result in a penalty of \$25.00 per day per workman so underpaid.

SAFETY

The Contractor shall execute and maintain his/her work so as to avoid injury or damage to any person or property. The Contractor shall comply with the requirements of the specifications relating to safety measures applicable in particular operations or kinds of work.

In carrying out his/her work, the Contractor shall at all times, exercise all necessary precautions for the safety of employees appropriate to the nature of the work and the conditions under which the work is to be performed, and be in compliance with all federal, state and local statutory and regulatory requirements including California Department of Industrial Relations (Cal/OSHA) regulations; and the U.S. Department of Transportation Omnibus Transportation Employee Testing Act (as applicable). Safety precautions as applicable shall include, but shall not be limited to, adequate life protection, and life saving equipment; adequate illumination for underground and night operations; instructions in accident prevention for all employees such as machinery guards, safe walkways, scaffolds, ladders, bridges, gang planks; confined space procedures; trenching and shoring; fall protection; and other safety devices, equipment and wearing apparel as are necessary or lawfully required to prevent accidents, injuries, or illnesses; and adequate facilities for the proper inspection and maintenance of all safety measures.

The Contractor shall be responsible for the safeguarding of all utilities. At least two working days before beginning work, the Contractor shall call the Underground Service Alert (USA) in order to determine the location of sub-structures. The Contractor shall immediately notify the District and the utility owner if he/she disturbs, disconnects, or damages any utility.

In accordance with Section 6705 of the California Labor Code, the Contractor shall submit to the District specific plans to show details of provisions for worker protection from caving ground during excavations of trenches of five feet or more in depth. The excavation/trench safety plan shall be submitted to and accepted by the District prior to starting excavation. The trench safety plan shall have details showing the design of shoring, bracing, sloping or other provisions to be made for worker protection from the hazard of caving ground. If such a plan varies from the shoring system standards established by the Construction Safety Orders of the California Department of Industrial Relations (Cal/OSHA), the plan shall be prepared by a California registered civil or structural engineer. As part of the plan, a note shall be included stating that the registered civil or structural engineer certifies that the plan complies with the Cal/OSHA Construction

Safety Orders, or that the registered civil or structural engineer certifies that the plan is not less effective than the shoring, bracing, sloping or other provisions of the Safety Orders. In no event shall the Contractor use a shoring, sloping, or protective system less effective than that required by said Construction Safety Orders. Submission of this plan in no way relieves the Contractor of the requirement to maintain safety in all areas. If excavations or trench work requiring a Cal/OSHA permit are to be undertaken, the Contractor shall submit his/her permit with the excavation/trench work safety plan to the District before work begins.

The names and telephone numbers of at least two medical doctors practicing in the vicinity and the telephone number of the local ambulance service shall be prominently displayed adjacent to telephones.

EXCAVATIONS DEEPER THAN FOUR FEET INVOLVING HAZARDOUS WASTES OR MATERIALLY DIFFERENT SITE CONDITIONS

(Public Contract Code 7104)

If the contract involves digging trenches or other excavations that extend deeper than four feet below the surface:

- a. The Contractor shall promptly, and before any of the following conditions are disturbed, notify the District, in writing, of any:
 1. Material that the Contractor believes may be material that is hazardous waste as defined in Section 25117 of the Health and Safety Code, that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law;
 2. Subsurface or latent physical conditions at the site differing from those indicated;
 3. Unknown physical conditions at the site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the contract.
- b. The District shall promptly investigate the conditions, and if it finds that the conditions do materially so differ, or do involve hazardous waste, and cause a decrease or increase in the Contractor's cost of, or the time required for, performance of any part of the work, it shall issue a change order under the procedures described in the Agreement.
- c. In the event that a dispute arises between the District and the Contractor whether the conditions materially differ, or involve hazardous waste, or cause a decrease or increase in the Contractor's cost of, or time required for, performance of any part of the work, the Contractor shall not be excused from any scheduled completion date provided for by the Agreement, but shall proceed with all work to be performed under the Agreement. The Contractor shall retain any and all rights provided either by contract or by law, which pertains to the resolution of disputes and protests between the contracting parties.

TRENCH EXCAVATION: APPROVAL OF PLAN FOR PROTECTION FROM CAVING

(Labor Code 6705)

If the contract involves an estimated expenditure of more than \$25,000, for the excavation of any trench or trenches five feet or more in depth, the Contractor shall submit, for acceptance and approval by the District or its designated engineer, in advance of excavation, a detailed plan showing the design of

shoring, bracing, sloping, or other provision to be made for worker protection from the hazard of caving ground during such excavation, all in accordance with Labor Code Section 6705.

UNIDENTIFIED UTILITIES - COSTS

(Government Code 4215)

The District shall be responsible for the timely removal, relocation, or protection of existing main or trunk line utility facilities located on the construction site, if such utilities are not identified in the plans and specifications for the work. The Contractor shall be compensated for his actual costs of locating, repairing damage not due to his failure to exercise reasonable care, and removing or relocating such utility facilities not indicated in the plans and specifications with reasonable accuracy, and for equipment on the project necessarily idled during such work. If the Contractor discovers utility facilities not identified in the contract plans or specifications, he shall immediately notify the District and the utility in writing. The Contractor shall not be assessed liquidated damages for delay if caused by the failure of the District or the owner of the utility to provide for removal or relocation of such utility facilities. The District shall provide a layout of all main lines and existing service laterals. The Contractor shall exercise due care in verifying the locations provided by the District and shall notify the District of site conditions that differ from those indicated.

DISPUTE RESOLUTION PROCEDURES FOR CLAIMS OF LESS THAN 375,000

(Public Contract Code 20104-20101.6)

Sections 20104 - 20104.6 of the Public Contract Code set forth required procedures for the parties to resolve claim disputes involving less than \$375,000, including the presentation of written claims with substantiating documents on or before the date of final payment, requests for additional documentation, time limits for responding to written claims, and requiring a conference to meet and confer; and also relating to filing a claim before suit, and required arbitration provisions in the event of a civil action filed to resolve the claim. All of such procedures, time limits and requirements shall be complied with if such Code sections are applicable to disputed claim.

ASSIGNMENT OF ANTITRUST/UNFAIR BUSINESS PRACTICE CLAIMS

(Public Contract Code 7103)

Pursuant to Public Contract Code Section 7103, Contractor and any subcontractors supplying goods, services or materials under this contract agree to assign District all rights, title and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C Sec. 15) or under the Cartwright Act (Chapter 2 commencing with Section 16700 of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services or materials pursuant to this contract or the subcontract.

By _____
Contractor

By _____

Marina Coast Water District

Approved by Board on: _____

PART VI

CONTRACT NO:

TECHNICAL SPECIFICATIONS – CONTENTS

DIVISION 1 – GENERAL REQUIREMENTS

SECTION 01010 – SUMMARY OF WORK

SECTION 01025 – MEASUREMENT AND PAYMENT

SECTION 01060 – REGULATORY REQUIREMENTS

SECTION 01070 – ABBREVIATIONS OF INSTITUTIONS

SECTION 01090 – REFERENCE OF STANDARDS

SECTION 01300 – CONTRACTOR SUBMITTALS

SECTION 01505 – MOBILIZATION/DEMOBILIZATION

SECTION 01530 – PROTECTION OF EXISTING FACILITIES

SECTION 01550 – SITE ACCESS AND STORAGE

SECTION 01560 – TEMPORARY ENVIRONMENTAL CONTROLS

SECTION 01570 – TRAFFIC REGULATIONS

SECTION 01600 – PRODUCTS, MATERIALS, EQUIPMENT AND SUBSTITUTIONS

SECTION 01700 – PROJECT CLOSEOUT

DIVISION 2 – SITE WORK

SECTION 02051 – DEMOLITION AND SALVAGE

SECTION 02200 – EARTHWORK

SECTION 02590 – WATER METERS

SECTION 01010 - SUMMARY OF WORK

PART 1 -- GENERAL

1.1 GENERAL

- A. The WORK to be performed under this Contract shall consist of furnishing all plant, tools, equipment, materials, supplies, and manufactured articles and furnishing all labor, transportation, and services, including fuel, power, water, and essential communications, and performing all work, or other operations required for the fulfillment of the Contract in strict accordance with the Contract Documents. The WORK shall be complete, and all work, materials, and services not expressly indicated or called for in the Contract Documents which may be necessary for the complete and proper construction of the WORK in good faith shall be provided by the CONTRACTOR as though originally so indicated, at no increase in cost to the OWNER. Such other items or details not mentioned above, that are required by the Plans, various applicable codes, standards, specifications, and these specifications shall be performed, planned, constructed, or installed. The Contract Time is further defined in paragraph 3.1 in this Section.

1.2 SCOPE-OF-WORK COVERED BY CONTRACT DOCUMENTS

- A. The WORK of this Contract comprises of the installation of water meters for residential areas and landscape areas within the California State University Monterey Bay vicinity with the Presidio of Monterey vicinity. The area is as shown as shown on the construction plans. The WORK includes the secure installation of approximately 1,538 meters for the Presidio of Monterey and approximately 194 meters and some 1,153 sub-meters for California State University Monterey Bay.
- B. The WORK is located in Marina, Seaside and Monterey County, California in Monterey County. The meter locations are located on publicly owned easements, some are in County road rights of way, and some are in the City of Marina and City of Seaside rights of way.

1.3 CONTRACT METHOD

- A. The WORK, hereunder will be constructed under a single unit-price contract.

1.4 WORK BY OTHERS

- A. The CONTRACTOR's attention is directed to the fact that work may be conducted at or near the site by other contractors during the performance of the WORK under this Contract. The CONTRACTOR shall conduct its operations so as to cause a minimum of interference with the WORK of such other contractors, and shall cooperate fully with such contractors to provide continued safe access to their respective portions of the site, as required to perform work under their respective contracts.
- B. **Interference With Work On Utilities:** The CONTRACTOR shall cooperate fully with all utility forces of the OWNER or forces of other public or private agencies engaged in the relocation, altering, or otherwise rearranging of any facilities which interfere with the

progress of the WORK, and shall schedule the WORK so as to minimize interference with said relocation, altering, or other rearranging of facilities.

- C. **Concurrent Work by Other Contractors:** The CONTRACTOR's attention is directed to the fact that work may be conducted adjacent to the site by other contractors during the performance of the WORK of this Contract.

1.5 CONTRACTOR USE OF PROJECT SITE

- A. The CONTRACTOR's use of the project site shall be limited to its construction operations, including on-site storage of materials, on-site fabrication facilities, and field offices.
- B. The CONTRACTOR shall obtain any staging and storage area and associated permits and approvals needed outside the construction easement and permanent easement areas shown in the Contract Documents.
- C. The CONTRACTOR shall obtain trench spoils disposal site(s) and necessary fill and grading permits.
- D. Temporary Construction Easement for staging and storage is defined in *Section 01550 "Site Access and Storage."*

1.6 PROJECT MEETINGS

A. **Preconstruction Conference:**

1. Prior to the commencement of WORK at the site, one preconstruction conference will be held at a mutually agreed time and place which shall be attended by the CONTRACTOR'S Project Manager, its Superintendent, and its Subcontractors as the CONTRACTOR deems appropriate. Other attendees will be:
 - a. RESIDENT ENGINEER.
 - b. Representatives of OWNER.
 - c. Governmental representatives as appropriate.
 - d. Others as requested by RESIDENT ENGINEER, CONTRACTOR, or OWNER.
2. The CONTRACTOR shall bring to the conference the submittals specified in *Section 01300, "Contractor Submittals."*
3. The purpose of the conference is to designate responsible personnel and establish a working relationship. Matters requiring coordination will be discussed and procedures for handling such matters established. The complete agenda will be furnished to the CONTRACTOR prior to the meeting date. However, the CONTRACTOR should be prepared to discuss all of the items listed below.
 - a. Status of CONTRACTOR's insurance and bonds.

- b. CONTRACTOR's tentative schedules.
 - c. Transmittal, review, and distribution of CONTRACTOR's submittals.
 - d. Processing applications for payment.
 - e. Maintaining record documents.
 - f. Critical work sequencing.
 - g. Field decisions and Change Orders.
 - h. Use of project site, office and storage areas, security, housekeeping, and OWNER's needs.
 - i. Major equipment deliveries and priorities.
 - j. CONTRACTOR's assignments for safety and first aid.
- 4. The RESIDENT ENGINEER will preside at the preconstruction conference and will arrange for keeping and distributing the minutes to all persons in attendance.
 - 5. The CONTRACTOR and its Subcontractors should plan on the conference taking 1 full working day. The morning will cover the items listed in paragraph 3, and the afternoon will be spent on reviewing the plans and specifications, in extensive detail, with the RESIDENT ENGINEER and the OWNER.

B. Progress Meetings:

- 1. The CONTRACTOR shall attend regular on-site progress meetings at least weekly -and at other times as requested by RESIDENT ENGINEER or as required by progress of the WORK. The CONTRACTOR, RESIDENT ENGINEER, and all Subcontractors active on the site must attend each meeting. CONTRACTOR may at its discretion request attendance by representatives of its Suppliers, manufacturers, and other Subcontractors.
- 2. The RESIDENT ENGINEER shall preside at the meetings and will arrange for keeping and distributing the minutes. The purpose of the meetings will be to review the progress of the WORK, maintain coordination of efforts, discuss changes in scheduling, and resolve other problems which may develop. During each meeting, the CONTRACTOR is required to present any issues which may impact his work, with a view to resolve these issues expeditiously.

1.7 DEFINITIONS APPLICABLE TO TECHNICAL SPECIFICATIONS

- A. The following words shall have the defined meaning in the Technical Portions of the WORK:

Indicated -is a word used to direct the CONTRACTOR-to information contained on the drawings or in the Specifications. Terms such as “shown,” “noted,”

“scheduled,” and “specified” also may be used to assist in locating information but no limitation of location is implied or intended.

Furnish	-means to supply and deliver to the site, to unload and unpack ready for assembly, installation, testing, and startup.
Install	-defines operations at the site including assembly, erection, placing, anchoring, applying, shaping to dimension, finishing, curing, protecting, and cleaning, ready for the OWNER's use.
Provide	-is defined as furnish and install, test, adjust, program, and demonstrate proper operation if required by the specification, ready for the intended use.
Installer	-a person or firm engaged by the CONTRACTOR or its subcontract or any subcontractor for the performance of installation, erection, or application work at the site. Installers must be expert in the operations they are engaged to perform.

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION

3.1 CONTRACT TIME

- A. **FULL COMPLETION:** The WORK shall be fully completed **200** days after the commencement date started in the Notice to Proceed. Full completion shall be defined as complete installation and operation of the WORK.

END OF SECTION -

SECTION 01025 - MEASUREMENT AND PAYMENT

PART 1 -- GENERAL

1.1 SCOPE

- A. Measurements of the completed work shall be in accordance with, and by instruments and devices calibrated to United States Standard Measures, and the units of measurement for payment, and the limits thereof, shall be made as shown on the Plans, Specifications, General Requirements, and Supplementary Conditions.

1.2 UNITS OF MEASUREMENT

- A. Measurements shall be in accordance with U.S. Standard Measures. A pound is an avoirdupois pound. A ton is 2,000 pounds avoirdupois. The unit of liquid measure is the U.S. gallon. The unit of length is feet. The unit of volume is cubic yards.

1.3 CERTIFIED WEIGHTS

- A. When payment is to be made on the basis of weight, the weighing shall be done on certified platform scales, or when approved by the RESIDENT ENGINEER, on a completely automated weighing and recording system. The CONTRACTOR shall furnish the RESIDENT ENGINEER with duplicate licensed weighmaster's certificates showing the actual net weights. The OWNER will accept the certificates as evidence of the weights delivered.

1.4 METHODS OF MEASUREMENT

- A. Materials and items of work which are to be paid for on the basis of measurement shall be measured in accordance with the method stipulated in the particular sections involved. In determining quantities, all measurements shall be made in a horizontal plane unless otherwise specified.
- B. Material not used from a transporting vehicle shall be determined by the RESIDENT ENGINEER and deducted from the certified tag.
- C. When material is to be measured and paid for on a volume basis and it would be impractical to determine the volume, or when requested by the CONTRACTOR in writing and approved by the RESIDENT ENGINEER in writing, the material will be weighed and converted to volume measurement for payment purposes. Factors for conversion from weight measurement to volume measurement will be determined by the RESIDENT ENGINEER and shall be agreed to by the CONTRACTOR before such method of measurement of pay quantities will be adopted.
- D. Full compensation for all expense involved in conforming to the above requirements for measuring and weighing materials shall be considered as included in the unit prices paid for the materials being measured or weighed and no additional allowances will be made therefore.
- E. Quantities of material wasted or disposed of in a manner not called for under the Contract; or rejected loads of material, including material rejected after it has been placed by reason

of failure of the CONTRACTOR to conform to the provisions of the Contract; or material not unloaded from the transporting vehicle; or material placed outside the lines indicated on the plans or given by the RESIDENT ENGINEER; or material remaining on hand after completion of the Contract, will not be paid for and such quantities will not be included in the final total quantities. No compensation will be allowed for hauling rejected material.

- F. Bid items include all work necessary to complete the specific item described and not otherwise included in other bid items. The CONTRACTOR shall include in each bid item all costs required to construct the work in accordance with the Contract Documents.

PART 2 -- DESCRIPTION OF BID ITEMS

Mobilization/Demobilization, Bid Item No. 1

The lump sum bid price for this item shall constitute full compensation for mobilization and demobilization including but not limited to equipment shipping and delivery, equipment set up, materials shipping and delivery, utility coordination and permitting. Mobilization bid item shall not be in excess of 10 percent of the total bid schedule. Payment for mobilization shall conform to Section 11-1.02 of the State Standard Specifications.

Clearing, Grubbing, and Restoration, Bid Item No. 2

The lump sum bid price for this item shall constitute full compensation for site preparation including but not limited to: clearing, grubbing and stripping on-site as necessary to remove all interfering or objectionable material from work areas within which excavation is to be conducted, or storage of excavated materials or fill is to be made; demolition of existing structures and features identified on the drawings, and removal and disposal of such material. Payment of this item also constitutes full compensation for the replacement of any permanent facilities damaged, removed, or relocated during construction including, but not limited to utilities, fencing, and power poles.

Furnish and Install Water Meters, Bid Item No's. 3, 4, 5 & 6.

Measurement of payment for the labor, tools, material and equipment for the installation of water meters below grade shall be based upon the quantity of each meter installed. Payment for each water meter shall be made at the unit prices per water meter in the Bid Schedule inclusive, which prices shall constitute full compensation for furnishing, placing, testing and disinfecting all such meters, pipeline, complete in place, including the costs of furnishing and installing pipe, fittings, reducers, tees, adapters, meter boxes, and gravel backfill; all earthwork, including exploratory excavation to verify location of existing utilities, trench excavation other than overexcavation directed by the RESIDENT ENGINEER, and all shoring and bracing, complete and in place, required for these excavations; trench backfill, and compaction; the protection and temporary support of existing service and utility lines; pavement removal, disposal, repair and replacement; disposal of water used in flushing the pipeline; restrained joints and/or thrust blocks; unpaved road surfacing; cleanup; and all other incidental and appurtenant work to complete this item

Furnish and Install Water Meters, Bid Item No's. 7 & 8.

Measurement of payment for the labor, tools, material and equipment for the installation of sub-meters at each multi-residential building shall be based upon the quantity of each multi-residential building unit served. Payment for each water sub-meter shall be made at the unit prices per water meter in the Bid Schedule inclusive, which prices shall constitute full compensation for furnishing, placing, testing and disinfecting all such meters, pipeline, complete in place, including the costs of furnishing and installing

pipe, fittings, reducers, tees, adapters, meter boxes, electrical devices, and gravel backfill; all earthwork, including exploratory excavation to verify location of existing utilities, trench excavation other than overexcavation directed by the RESIDENT ENGINEER, and all shoring and bracing, complete and in place, required for these excavations; trench backfill, and compaction; the protection and temporary support of existing service and utility lines; pavement removal, disposal, repair and replacement; disposal of water used in flushing the pipeline; restrained joints and/or thrust blocks; unpaved road surfacing; cleanup; and all other incidental and appurtenant work to complete this item. . Operation and maintenance manuals, one day training for use of the sub-metering devices installed, software documentation for the sub-metering installed shall be included under this bid item.

-END OF SECTION -

SECTION 01060 -REGULATORY REQUIREMENTS

PART 1 -- GENERAL

1.1 THE REQUIREMENT

- A. Permits, approvals and agreements from various agencies, public and private, and from property owners, are required for execution of the WORK and agreements under this Contract. For the purposes of this Section 01060, "Permits" is defined to include all of the permit approvals and agreements referenced. Sometimes these permits require fees to be paid by the CONTRACTOR and sometimes these permits impose construction conditions. Some of these permits have been obtained by the OWNER and some shall have to be obtained by the CONTRACTOR as shown in *Table 1 of Appendix B*. The CONTRACTOR shall include in its overall bid the cost of obtaining any necessary permits and the preparation of any plans required by these permits not obtained by the OWNER, including application fees and any other costs; and the cost for complying with all of the conditions set by all of the required permits. All other cost including, but not limited to, relocation, removal, or protection of facilities owned by various agencies, public and private, and by property owners shall be paid for by the CONTRACTOR, unless otherwise shown or specified in the Contract Documents. For permits that the OWNER obtains, the OWNER will directly pay the permitting agencies and companies for application fees, permit renewal fees, and inspection fees.
- B. The intent of this Section is to provide Bidders with an abstract of the requirements of permits required for the WORK under this Contract and indicate which of these permits have been acquired. Copies of the applicable permits that are available are provided to the CONTRACTOR in *Appendix B* of these Specifications.
- C. Actual or probable conditions of the acquired permits and approvals are provided in Paragraphs 01060-1.2 through 01060-1.4 to promote the Bidder's awareness of the conditions and requirements of the issuing authority, public or private. In case of conflict between these summaries and the actual permits and approvals in *Appendix B*, the conditions set forth in the permits and approvals in *Appendix B* take precedence over the summaries given in Paragraph 01060-1.2 through 1.4.

1.2 SUMMARY OF PERMITS AND APPROVALS

- A. The following permits are organized to present the federal, state, and local permitting agencies, respectively, followed by utility and other companies that own and operate adjacent facilities. A list of contacts is presented in Paragraph 01060-1.2.16.
- 1.2.1 **Encroachment Permits** - The OWNER will obtain the encroachment permits, if applicable. The CONTRACTOR shall comply with all requirements of the Monterey County Public Works, City of Marina, City of Seaside, Presidio of Monterey, and the California State University Monterey Bay. The conditions of the permit(s) will include, but not be limited to the following:
- a. Notify the County at (831) 755-4930 at least 2 working days prior to construction within the County limits along the streets that the county has jurisdiction.

- b. The CONTRACTOR shall maintain two-way traffic at all times during construction. At least one 12-foot lane must be maintained for traffic during construction activities. Road shall be restored to two 12-foot unrestricted traffic lanes.
- c. Street trenches shall be completely backfilled and compacted suitable for public traffic at the end of each working day. A temporary minimum 2" patch shall be placed over all street trenches within 48 hours after backfilling including weekends and holidays. Trenches shall be continuously maintained to existing pavement grade by the CONTRACTOR, until final surfacing is placed.
- d. Trenches shall be located further from roadway structures, curbs, gutters, and sidewalks, than a distance equal to the depth of the trench except as shown otherwise on the approved plans. All road structures, pavement, curbs, gutters, sidewalks, that are undermined or disturbed during construction shall be removed, the ground recompact and a new structure installed at the CONTRACTOR's expense and in accordance with County specifications.
- e. The CONTRACTOR shall assist the RESIDENT ENGINEER in providing advance notice to the public, to the police and sheriff departments, and to emergency agencies including fire departments and ambulance services. Emergency access for all structures adjacent to the construction site shall be maintained at all times.
- f. The CONTRACTOR may store up to one day's worth of materials in public right-of-way but outside of the traveled way. No equipment or materials may be left in the public right-of-way during the weekend when the materials are not being used by the CONTRACTOR.
- g. The CONTRACTOR must wash and sweep all public streets and roadways affected by its daily operations, including truck routes. Such areas will include pavement, gutters, sidewalks, and other paved areas as well as all catch basins and storm drain inlets. All areas shall present a clean appearance once dry and shall be free from loose or muddy materials.
- h. The County may provide an inspector(s) to inspect the CONTRACTOR's work within County streets including, but not limited to, final paving, pavement striping, traffic loop replacement, water main support, and construction traffic control.
- i. When any trench is five feet or more in depth, the CONTRACTOR shall obtain a "Permit to Excavate" from the Division of Industrial Safety, Department of Industrial Relations, State of California. No work shall commence until a copy of the permit has been furnished to Monterey County Public Works Department.
- j. A Traffic Control Detail Plan drawing shall be prepared by the CONTRACTOR's California licensed Traffic Engineer to control traffic when construction occurs within the County road rights-of-way. The CONTRACTOR's Traffic Engineer who prepares the Traffic Control Detail Plan shall be available at any time during the time of contract to modify the Traffic Control Detail Plan if and as required by the agency having jurisdiction. No changes or deviations from the approved Traffic Control Detail Plan shall be made, except temporary changes in emergency

situations, with prior approval of the CONTRACTOR's Traffic Engineer, the RESIDENT ENGINEER, and all agencies having jurisdiction.

The CONTRACTOR shall submit the Traffic Control Detail Plan for review and written approval of Monterey County or any other agency having jurisdiction of the affected area. The CONTRACTOR shall allow minimum of three weeks for review by the jurisdictional agencies. The County Public Works Director reserves the right to observe the Traffic Control Detail Plan in use and to make any changes as field conditions warrant. Any changes shall supersede these plans and be done solely at the CONTRACTOR's expense.

No work will be allowed in public rights-of-way until the CONTRACTOR obtains written approval of the Traffic Control Detail Plan and construction sequencing from Monterey County or any other agency having jurisdiction of the affected area.

At a minimum, the following information shall be included in the Traffic Control Detail Plan:

- (1) The sequences of construction affecting the use of the roadway conforming to the maximum time required for each phase of the WORK as specified herein.
 - (2) The provisions for bridging over excavations or phasing of operations, or a combination of these two methods, to provide the necessary access.
 - (3) The signing, barricading, and temporary striping or marking specified and as necessary to provide passage for pedestrians and vehicles.
 - (4) The number and width of vehicular lanes over and adjacent to trenches and other excavations.
 - (5) Haul route plans.
- k. All traffic control devices shall conform to the provisions in latest edition of CalTrans Standard Specification, Section 12, "Construction Area Traffic Control Devices," and to the CalTrans Manual of Traffic Controls for Construction and Maintenance WORK Zones and the agency having jurisdiction. Items included, but not limited to, are flag units, construction signs, channelizing devices, barricades, delineators, lighting devices.
- l. All signs which are to convey their messages during darkness shall be reflectorized or illuminated. No signs or supports shall bear any commercial advertising.
- m. All lights shall be directed away from the directions of oncoming traffic.
- n. Temporary paint striping shall conform to the latest edition of CalTrans Standard Specifications, Section 84-3, "Painted Stripes and Pavement Markings." Temporary reflective raised pavement markers shall be Safe-Hit, Stimsonite Model 66, Flex-O-Lite (RCM), or equal.

- o. The CONTRACTOR shall contact Underground Services Alert (USA) at least 2 working days prior to construction within the Monterey County road rightsof-way.
- p. Where 50 percent of the traffic lane or more than 50 percent of the roadway is damaged, the entire lane or roadway shall be reconstructed.
- s. Grass and shrubbery disturbed by this WORK shall be replaced and restored to pre-construction conditions.

1.2.2 **Pacific Gas and Electric Company (PG&E)** - PG&E owns and operates overhead and underground transmission and distribution gas and electrical facilities that cross and parallel the pipeline alignment. The OWNER will obtain the approvals for crossing the PG&E facilities. The conditions of the permit probably will include:

- a. The CONTRACTOR shall contact Underground Services Alert (USA) at least 2 working days prior to construction within the vicinity of the underground gas or electric conduits. The CONTRACTOR shall also notify PG&E at (408) 755-3443 at least 5 working days prior to construction in the vicinity of underground gas facilities.

1.2.3 **List of Contacts**

The following table lists the contact telephone numbers for each agency.

Agencies or Utilities	Contact Number
Regional Water Quality Control Board	(805) 549-3694
Monterey County (Pub. Works)	(831) 755-4930
Monterey County (Env. Health)	(831) 755-4964
Pacific Gas & Electric Company	(831) 755-3443
Underground Services Alert (USA)	(800) 642-2444

1.3 ENVIRONMENTAL RESTRICTIONS

In addition to the requirements in Paragraph 01060-1.2, herein, environmental protection, protection of sensitive habitats, and other actions are required by mitigation measures adopted by the OWNER. The requirements listed below generally are in addition to those described in the permits and approvals abstracted in Paragraph 01060-1.2.

Sensitive resource areas as described below identified in the Contract Documents that are outside, but adjacent to designated work areas will be flagged or fenced and posted by the OWNER two weeks before ground disturbing construction activities. CONTRACTOR shall prohibit construction activities or construction personnel and equipment from entering designated sensitive resource areas. If CONTRACTOR's personnel or equipment enter these areas, CONTRACTOR will notify the OWNER and the designated contact person identified on posted signs. Sensitive environmental resources that are damaged by the CONTRACTOR's operations shall be replaced or restored at the CONTRACTOR's expense. These resources shall be replaced or restored to as good a condition, as determined by the OWNER, as when the CONTRACTOR entered upon the WORK. The CONTRACTOR's attention is directed to *Paragraph IV-F "Changes in the*

WORK." which will also apply to sensitive environmental resources damaged by the CONTRACTOR's operations.

The CONTRACTOR's attention is directed to **Paragraph XXX-XX.xx, "Reject Payment for Defective Work-**" and to **Paragraph XXX-XX.yy, "Permits,"** regarding penalties that may be assessed by agencies for damage to sensitive environmental resources.

1.3.2 **Traffic Restrictions** - All construction vehicles must observe a speed limit of 20 MPH on the construction site, except when on county or state roadways. CONTRACTOR shall limit night driving to the extent practicable. If night construction is unavoidable, CONTRACTOR will notify the RESIDENT ENGINEER.

1.3.3 **Cultural Resources** - The CONTRACTOR's attention is directed to the National Historic Preservation Act of 1966 (16 U.S.C. 470) and 36 CFR 800 which provides for the preservation of potential historical architectural, archaeological, or cultural resources hereinafter called "cultural resources."

The CONTRACTOR shall conform to the applicable requirements of the National Historic Preservation Act of 1966 as it is related to the preservation of cultural resources.

- a. All cultural materials or human remains discoveries that would be disturbed as a result of the WORK must be reported immediately to the RESIDENT ENGINEER and all work must immediately halt within 200 feet of the discovery to allow inspection by the OWNER's representative and until the area is cleared by the OWNER's representative. Cultural materials include, but are not limited to, bones and bone pieces (both human and animal), rock walls, dump sites (including privies and wells), hearths or ovens, fist size rock concentrations with or without charcoal stains, slabs of grinding rock and obsidian pieces or chips. The CONTRACTOR's attention is directed to **General Conditions, Section 10 - "Changes in the Work,"** regarding changes that may be required as a result of the discovery of cultural materials that would be disturbed as a result of the WORK.

1.3.4 **Disposal of Excess Excavated Material** - The execution of the WORK requires the CONTRACTOR to dispose of excess excavated material at a site or sites selected by the CONTRACTOR and approved by the RESIDENT ENGINEER. The following will be used by the RESIDENT ENGINEER in providing approval of the sites and methods proposed by the CONTRACTOR for the disposal of excess excavated material.

- a. Because the Department of the Army Permit does not authorize direct or indirect impacts to wetlands or other waters of the United States for the purpose of disposal of excess excavated materials, any sites proposed by the CONTRACTOR that include wetlands or waters of the United States will be rejected.
- b. The CONTRACTOR shall include sites for the disposal of excess excavated material in the CONTRACTOR's SWPPP.
- c. Access roadways to and from spoil disposal sites must conform to the requirements of Caltrans, or the county or city having jurisdiction on the roadway.
- d. The OWNER's Stream Alteration Agreement with the California Department of Fish and Game does not include disturbance to sloughs for the purpose of disposal

of excavated excess material. The CONTRACTOR shall select disposal sites that do not include streams or sloughs where Department of Fish and Game has jurisdiction.

1.4 PROPERTY OWNER AGREEMENTS

- A. The OWNER has obtained rights-of-way and temporary construction easements for this project. Unless approved in writing in advance by the OWNER and the property owners, the CONTRACTOR's vehicles, equipment, materials, and personnel shall remain within the limits of construction shown in the Contract Documents or on public property.

- END OF SECTION -

SECTION 01070 - ABBREVIATIONS OF INSTITUTIONS

PART 1 -- GENERAL

1.1 GENERAL

- A. Wherever in these Specifications references are made to the standards, specifications, or other published data of the various international, national, regional, or local organizations, such organizations may be referred to by their acronym or abbreviation only. As a guide to the user of these Specifications, the following acronyms or abbreviations which may appear in these Specifications shall have the meanings indicated herein.

1.2 ABBREVIATIONS

AAMA	Architectural Aluminum Manufacturer's Association
AAR	Association of American Railroads
AASHTO	American Association of State Highway and Transportation Officials
AATCC	American Association of Textile Chemists and Colorists
ACI	American Concrete Institute
AFBMA	Anti-Friction Bearing Manufacturer's Association, Inc.
AGA	American Gas Association
AGMA	American Gear Manufacturers Association
AHAM	Association of Home Appliance Manufacturers
AI	The Asphalt Institute
AIA	American Institute of Architects
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
AMCA	Air Moving and Conditioning Association
ANS-	American Nuclear Society
ANSI	American National Standards Institute, Inc.
APA	American Plywood Association
API	American Petroleum Institute
APWA	American Public Works Association
ASA	Acoustical Society of America
ASAE	American Society of Agricultural Engineers
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating, and Air Conditioning Engineers
ASLE	American Society of Lubricating Engineers
ASME	American Society of Mechanical Engineers
ASQC	American Society for Quality Control
ASSE	American Society of Sanitary Engineers
ASTM	American Society for Testing and Materials
AWPA	American Wood Preservers Association
AWPI	American Wood Preservers Institute
AWS	American Welding Society
AWWA	American Water Works Association
BBC	Basic Building Code, Building Officials and Code Administrators International
BHMA	Builders Hardware Manufacturer's Association
CBM	Certified Ballast Manufacturers

CEMA	Conveyors Equipment Manufacturer's Association
CGA	Compressed Gas Association
CLPCA	California Lathing and Plastering Contractors Association
CLFMI	Chain Link Fence Manufacturer's Institute
CMA	Concrete Masonry Association
CRSI	Concrete Reinforcing Steel Institute
DCDMA	Diamond Core Drill Manufacturer's Association
EIA	Electronic Industries Association
ETL	Electrical Test Laboratories
EPA	Environmental Protection Agency
FM	Factory Mutual System
FPL	Forest Products Laboratory
HI	Hydronics Institute
IAPMO	International Association of Plumbing and Mechanical Officials
ICBO	International Conference of Building Officials
IEEE	Institute of Electrical and Electronics Engineers
IES	Illuminating Engineering Society
IME	Institute of Makers of Explosives
IP	Institute of Petroleum (London)
IPC	Institute of Printed Circuits
IPCEA	Insulated Power Cable Engineers Association
ISA	Instrument Society of America
ISO	International Organization for Standardization
ITE	Institute of Traffic Engineers
MBMA	Metal Building Manufacturer's Association
MPTA	Mechanical Power Transmission Association
MSS	Manufacturers Standardization Society
MTI	Marine Testing Institute
NAAMM	National Association of Architectural Metal Manufacturer's
NACE	National Association of Corrosion Engineers
NBS	National Bureau of Standards
NCCLS	National Committee for Clinical Laboratory Standards
NEC	National Electrical Code
NEMA	National Electrical Manufacturer's Association
NFPA	National Fire Protection Association
NFPA	National Forest Products Association
NLGI	National Lubricating Grease Institute
NMA	National Microfilm Association
NSF	National Sanitation Foundation
NWMA	National Woodwork Manufacturers Association
OSHA	Occupational Safety and Health Administration
PCA	Portland Cement Association
PPI	Plastics Pipe Institute
RCRA	Resource Conservation and Recovery Act
RIS	Redwood Inspection Service
RVIA	Recreational Vehicle Industry Association
RWMA	Resistance Welder Manufacturer's Association
SAE	Society of Automotive Engineers
SAMA	Scientific Apparatus Makers Association
SMA	Screen Manufacturers Association
SMACCNA	Sheet Metal and Air Conditioning Contractors National Association

SPI	Society of the Plastics Industry, Inc.
SPIB	Southern Pine Inspection Bureau
SPR	Simplified Practice Recommendation
SSA	Swedish Standards Association
SSBC	Southern Standard Building Code, Southern Building Code Congress
SSPC	Steel Structures Painting Council
SSPWC	Standard Specifications for Public Works Construction
TAPPI	Technical Association of the Pulp and Paper Industry
TFI	The Fertilizer Institute
UBC	Uniform Building Code
UL	Underwriters Laboratories, Inc.
WCLIB	West Coast Lumber Inspection Bureau
WCRSI	Western Concrete Reinforcing Steel Institute
WEF	Water Environment Federation
WIC	Woodwork Institute of California
WRI	Wire Reinforcement Institute, Inc.
WWPA	Western Wood Products Association

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

– END OF SECTION –

SECTION 01090 - REFERENCE STANDARDS

PART 1 -- GENERAL

1.1 GENERAL

- A. **Titles of Sections and Paragraphs:** Captions accompanying specification sections and paragraphs are for convenience of reference only, and do not form a part of the Specifications.
- B. **Applicable Publications:** Whenever in these Specifications references are made to published specifications, codes, standards, or other requirements, it shall be understood that wherever no date is specified, only the latest specifications, standards, or requirements of the respective issuing agencies which have been published as of the date that the WORK is advertised for bids, shall apply; except to the extent that said standards or requirements may be in conflict with applicable laws, ordinances, or governing codes. No requirements set forth herein or shown on the Drawings shall be waived because of any provision of, or omission from, said standards or requirements.
- C. **Specialists, Assignments:** In certain instances, specification text requires (or implies) that specific work is to be assigned to specialists or expert entities, who must be engaged for the performance of that work. Such assignments shall be recognized as special requirements over which the CONTRACTOR has no choice or option. These requirements shall not be interpreted so as to conflict with the enforcement of building codes and similar regulations governing the WORK; also they are not intended to interfere with local union jurisdiction settlements and similar conventions. Such assignments are intended to establish which party or entity involved in a specific unit of work is recognized as "expert" for the indicated construction processes or operations. Nevertheless, the final responsibility for fulfillment of the entire set of contract requirements remains with the CONTRACTOR.

1.2 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

- A. Without limiting the generality of other requirements of the Specifications, all work specified herein shall conform to or exceed the requirements of applicable codes and the applicable requirements of the following documents.
- B. References herein to "Building Code" or "Uniform Building Code" shall mean Uniform Building Code of the International Conference of Building Officials (ICBO). Similarly, references to "Mechanical Code" or "Uniform Mechanical Code," "Plumbing Code" or "Uniform Plumbing Code," "Fire Code" or "Uniform Fire Code," shall mean Uniform Mechanical Code, Uniform Plumbing Code and Uniform Fire Code of the International Conference of the Building Officials (ICBO). "Electric Code" or "National Electric Code (NEC)" shall mean the National Electric Code of the National Fire Protection Association (NFPA). The latest edition of the codes as approved by the Municipal Code and used by the local agency as of the date that the WORK is advertised for bids, as adopted by the agency having jurisdiction, shall apply to the WORK herein, including all addenda, modifications, amendments, or other lawful changes thereto.
- C. In case of conflict between codes, reference standards, drawings and the other Contract Documents, the most stringent requirements shall govern. All conflicts shall be brought to

the attention of the RESIDENT ENGINEER for clarification and directions prior to ordering or providing any materials or furnishing labor. The CONTRACTOR shall bid for the most stringent requirements.

- D. The CONTRACTOR shall construct the WORK specified herein in accordance with the requirements of the Contract Documents and the referenced portions of those referenced codes, standards, and specifications listed herein.

1. **Applicable Standard Specifications:** References in the Contract Documents to "Standard Specifications" or SSPWC shall mean the Standard Specifications for Public Works Construction, 1994 Edition.
2. References herein to "OSHA Regulations for Construction" shall mean **Title 29, Part 1926, Construction Safety and Health Regulations**, Code of Federal Regulations (OSHA), including all changes and amendments thereto.
3. -References herein to "OSHA Standards" shall mean **Title 29, Part 1910, Occupational Safety and Health Standards**, Code of Federal Regulations (OSHA), including all changes and amendments thereto.
4. **Applicable Safety Standards:** References herein to "Cal-OSHA" shall mean **State of California Department of Industrial Relations, Construction Safety Orders**, as amended to date, and all changes and amendments thereto.
5. Accessibility requirements shall conform to Title 24 of the California Administration Code and ADA Guidelines.

1.3 REGULATIONS RELATED TO CONSTRUCTION ACTIVITIES.

- A. The CONTRACTOR is responsible that all WORK included in the Contract Documents, regardless if shown or not, shall comply with all EPA, OSHA, RCRA, NFPA, and any other Federal, State, and Local Regulations governing construction activities, as referenced in Section 00700, "General Conditions."

1.4 REGULATIONS RELATED TO HAZARDOUS MATERIALS

- A. The CONTRACTOR is responsible that all WORK included in the Contract Documents, regardless if shown or not, shall comply with all EPA, OSHA, RCRA, NFPA, and any other Federal, State, and Local Regulations governing the storage and conveyance of hazardous materials, including petroleum products.
- B. Where no specific regulations exist, all chemical, hazardous, and petroleum product piping and storage in underground locations must be installed with double containment piping and tanks, or in separate concrete trenches and vaults, or with an approved lining which cannot be penetrated by the chemicals, unless waived in writing by the OWNER.

- END OF SECTION -

SECTION 01300 - CONTRACTOR SUBMITTALS

PART 1 -- GENERAL

1.1 GENERAL

- A. Wherever submittals are required hereunder, all such submittals by the CONTRACTOR shall be submitted to the RESIDENT ENGINEER.
- B. Within 14 days after the date of commencement as stated in the Notice to Proceed or at Preconstruction Conference, which may occur within 10 days of the date of commencement, the CONTRACTOR shall submit the following items to the RESIDENT ENGINEER for review:
 - 1. A preliminary schedule of Shop Drawings, Samples, and proposed Substitutes ("Or-Equal") submittals listed in the Bid.
 - 2. A list of all permits and licenses the CONTRACTOR shall obtain indicating the agency required to grant the permit and the expected date of submittal for the permit and required date for receipt of the permit.

1.2 PRECONSTRUCTION CONFERENCE SUBMITTALS

- A. At the preconstruction conference referred to in Section 01010, "Summary of Work," the CONTRACTOR shall submit the following items to the RESIDENT ENGINEER for review:
 - 1. A preliminary schedule of Shop Drawings, Samples, and proposed Substitute ("Or-Equal") submittals listed in the Bid.
 - 2. A list of all permits and licenses the CONTRACTOR shall obtain indicating the agency required to grant the permit, the expected date of submittal for the permit, and required date for receipt of the permit.
 - 3. A **14**-day plan of operation.
 - 4. A project overview bar chart of the plan of operation.

1.3 SHOP DRAWINGS

- A. Wherever called for in the Contract Documents, or where required by the RESIDENT ENGINEER, the CONTRACTOR shall furnish to the RESIDENT ENGINEER for review, 8 copies of each shop drawing submittal. The term "Shop Drawings" as used herein shall be understood to include detail design calculations, shop drawings, fabrication, and installation drawings, erection drawings, list, graphs, catalog sheets, data sheets, and similar items. Whenever the CONTRACTOR is required to submit design calculations as part of a submittal, such calculations shall bear the signature and seal of an ENGINEER registered in the appropriate branch and in the state wherein the project is to be built, unless otherwise directed.

- B. Normally, a separate transmittal form shall be used for each specific item or class of material or equipment for which a submittal is required. Transmittal of a submittal of various items using a single transmittal form will be permitted only when the items taken together constitute a manufacturer's "package" or are so functionally related that expediency indicates review of the group or package as a whole. A multiple-page submittal shall be collated into sets, and each set shall be stapled or bound, as appropriate, prior to transmittal to the RESIDENT ENGINEER.
- C. Except as may otherwise be indicated herein, the RESIDENT ENGINEER will return prints of each submittal to the CONTRACTOR with its comments noted thereon, within 14 working days following their receipt by the RESIDENT ENGINEER. It is considered reasonable that the CONTRACTOR shall make a complete and acceptable submittal to the RESIDENT ENGINEER by the second submission of a submittal item. The OWNER reserves the right to withhold monies due to the CONTRACTOR to cover additional costs of the RESIDENT ENGINEER's review beyond the second submittal. The RESIDENT ENGINEER'S maximum review period for each submittal, including all resubmittals, will be 14 working days per submittal. In other words, for a submittal that requires two resubmittals before it is complete, the maximum review period for that submittal could be 28 working days. No extension of Contract Time will be granted for delays due to resubmittals that are reviewed within the number of days specified.
- D. If 3 copies of a submittal are returned to the CONTRACTOR marked "NO EXCEPTIONS TAKEN," formal revision and resubmission of said submittal will not be required.
- E. If 3 copies of a submittal are returned to the CONTRACTOR marked "MAKE CORRECTIONS NOTED," formal revision and resubmission of said submittal will not be required.
- F. If a submittal is returned to the CONTRACTOR marked "REVISE AND RESUBMIT," the CONTRACTOR shall revise said submittal and shall resubmit the required number of copies of said revised submittal to the RESIDENT ENGINEER.
- G. If a submittal is returned to the CONTRACTOR marked "REJECTED-RESUBMIT," the CONTRACTOR shall revise said submittal and shall resubmit the required number of copies of said revised submittal to the RESIDENT ENGINEER.
- H. Fabrication of an item shall be commenced only after the RESIDENT ENGINEER has reviewed the pertinent submittals and returned copies to the CONTRACTOR marked either "NO EXCEPTIONS TAKEN" or "MAKE CORRECTIONS NOTED." Corrections indicated on submittals shall be considered as changes necessary to meet the requirements of the Contract Documents and shall not be taken as the basis for changes to the contract requirements.
- I. All CONTRACTOR shop drawings submittals shall be carefully reviewed by an authorized representative of the CONTRACTOR, prior to submittal to the RESIDENT ENGINEER. Each submittal shall be dated, signed, and certified by the CONTRACTOR, as being correct and in strict conformance with the Contract Documents. In the case of shop drawings, each sheet shall be so dated, signed, and certified. No consideration for review by the RESIDENT ENGINEER of any CONTRACTOR submittals will be made for any items which have not been so certified by the CONTRACTOR. All non-certified submittals will be returned to the CONTRACTOR without action taken by the RESIDENT

ENGINEER, and any delays caused thereby shall be the total responsibility of the CONTRACTOR.

- J. The RESIDENT ENGINEER's review of CONTRACTOR shop drawings submittals shall not relieve the CONTRACTOR of the entire responsibility for the correctness of details and dimensions. The CONTRACTOR shall assume all responsibility and risk for any misfits due to any errors in CONTRACTOR submittals. The CONTRACTOR shall be responsible for the dimensions and the design of adequate connections and details.

1.4 CONTRACTOR'S SCHEDULE

- A. The CONTRACTOR's construction schedule and report shall be prepared and submitted to the RESIDENT ENGINEER.

1.5 RECORD DRAWINGS

- A. The CONTRACTOR shall keep and maintain, at the job site, one record set of Drawings. On these, it shall mark all project conditions, locations, configurations, and any other changes or deviations which may vary from the details represented on the original Contract Drawings, including buried or concealed construction and utility features which are revealed during the course of construction. Special attention shall be given to recording the horizontal and vertical location of all buried utilities that differ from the locations indicated, or which were not indicated on the Contract Drawings. Said record drawings shall be supplemented by any detailed sketches as necessary or directed to indicate, fully, the WORK as actually constructed. These master record drawings of the CONTRACTOR's representation of as-built conditions, including all revisions made necessary by addenda and change orders shall be maintained up-to-date during the progress of the WORK.

Copies of the modified record drawings shall be submitted on completion of WORK. Failure to submit complete modified record drawings on completion of WORK will enact the liquidated damages clause for interim record drawings submittals described in *Article x of the Agreement*.

- B. Record drawings shall be accessible to the RESIDENT ENGINEER at all times during the construction period. RESIDENT ENGINEER may hold a progress payment amount of \$5,000 until Contract Record Drawings are up-to-date.
- C. Final payment will not be acted upon until the CONTRACTOR prepared record drawings have been prepared and delivered to the RESIDENT ENGINEER. Said up-to-date record drawings shall be in the form of a set of Contract Documents prints with any changes from the original Contract Documents carefully plotted on the prints in red ink.
- D. Upon substantial completion of the WORK and prior to final acceptance, the CONTRACTOR shall finalize and deliver a complete set of record drawings to the RESIDENT ENGINEER for transmittal to the OWNER, conforming to the construction records of the CONTRACTOR. This set of drawings shall consist of corrected drawings showing the reported location of the WORK. The information submitted by the CONTRACTOR and incorporated by the RESIDENT ENGINEER into the Record Drawings will be assumed to be correct, and the CONTRACTOR shall be responsible for

the accuracy of such information, and for any errors or omissions which may appear on the Record Drawings as a result.

- END OF SECTION -

SECTION 01505 – MOBILIZATION/DEMOBILIZATION

PART 1 -- GENERAL

1.1 GENERAL

A. Mobilization/Demobilization shall include the obtaining of all permits; moving onto and off of the project site, temporary buildings, and other construction facilities, including the dismantling and removal of such buildings and facilities; and implementing security requirements; all as required for the proper performance and completion of the WORK. Mobilization shall include the following principal items:

1. Moving on to the site of all CONTRACTOR's plant and equipment required for first month operations.
2. Installing temporary construction power, wiring, and lighting facilities.
3. Developing construction water supply.
4. Providing CONTRACTOR's field office trailers, complete with all specified furnishings and utility services including telephones, telephone appurtenances, etc., required to manage the WORK.
5. Providing all on-site communication facilities, including telephones.
6. Providing on-site sanitary facilities and potable water facilities.
7. Arranging for and erection of CONTRACTOR's work and storage yard.
8. Obtaining all required permits.
9. Having all OSHA required notices and establishment of safety programs.
10. Having the CONTRACTOR's superintendent at the job site full time.
11. Submitting initial submittals, including those required for the Preconstruction Conference.
12. Completing the Preconstruction Conference.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION

3.1 MEASUREMENT AND PAYMENT

Full compensation for Mobilization and Demobilization as described herein shall be the lump sum price bid for MOBILIZATION/DEMOBILIZATION, Bid Item No. 1.

- END OF SECTION -

SECTION 01530 - PROTECTION OF EXISTING FACILITIES

PART 1 -- GENERAL

1.1 GENERAL

- A. The CONTRACTOR shall protect all existing utilities and improvements not designated for removal and shall restore damaged or temporarily relocated utilities and improvements to a condition equal to or better than they were prior to such damage or temporary relocation, all in accordance with requirements of the Contract Documents.
- B. The CONTRACTOR shall verify the exact locations and depths of all existing utilities shown and the CONTRACTOR shall make exploratory excavations of all utilities that may interfere with the WORK. The depths at which existing underground utilities are shown are based on record drawings, limited potholing, and survey information, and are approximate only. Where the depths are not shown, no such information was obtained during design. The expected reliability of the utilities shown will be ± 1 foot vertical and ± 5 feet horizontal. When such exploratory excavations show the utility location as shown to be in error, the CONTRACTOR shall so notify the RESIDENT ENGINEER.
- C. *A pre-construction photo survey of the WORK area will be performed by the RESIDENT ENGINEER. This survey will include a detailed set of photos of all existing locations of meters, driveways, landscape, roads and structures near the proposed meter location. These photos will be used to identify any damages that occur during construction. Any damage occurring during construction to either the pavement or to nearby structures shall be repaired at the CONTRACTOR's expense.*

1.2 RIGHTS-OF-WAY

- A. The CONTRACTOR shall not do any work that would affect any oil, gas, sewer, or water pipeline; any telephone, telegraph, or electric transmission line; any fence; or any other structure, nor shall the CONTRACTOR enter upon the rights-of-way involved until notified by the RESIDENT ENGINEER that the OWNER has secured authority therefor from the proper party. After authority has been obtained, the CONTRACTOR shall give said party due notice of its intention to begin work, if required by said party, and shall remove, shore, support or otherwise protect such pipeline, transmission line, ditch, fence, or structure or replace the same. When two or more contracts are being executed at one time on the same or adjacent land in such manner that work on one contract may interfere with that on another, the OWNER shall determine the sequence and order of the WORK. When the territory of one contract is the necessary or convenient means of access for the execution of another contract, such privilege of access or any other reasonable privilege may be granted by the OWNER to the CONTRACTOR so desiring, to the extent, amount, in the manner, and at the times permitted. No such decision as to the method or time of conducting the WORK or the use of territory shall be made the basis of any claim for delay or damage, except as provided for temporary suspension of the WORK in *XXXX of the General Conditions of the Contract*.

1.3 PROTECTION OF STREET OR ROADWAY MARKERS AND MONUMENTS

- A. The CONTRACTOR shall not destroy, remove, or otherwise disturb any existing survey markers or other existing street or roadway markers without proper authorization. No pavement breaking or excavation shall be started until all survey or other permanent marker points that will be disturbed by the construction operations have been properly referenced. All survey markers or points disturbed by the CONTRACTOR shall be restored accurately after all street or roadway resurfacing has been completed.

1.4 RESTORATION OF PAVEMENT

- A. **General:** All paved areas including asphaltic concrete berms cut or damaged during construction shall be replaced with similar materials and of equal thickness to match the existing adjacent undisturbed areas, except where specific resurfacing requirements have been called for in the Contract Documents or in the requirements of the agency issuing the permit as specified under *Section 01060, "Regulatory Requirements."* All temporary and permanent pavement shall conform to the requirements of the affected pavement owner. All pavements which are subject to partial removal shall be neatly saw cut in straight lines.
- B. **Temporary Resurfacing:** Wherever required by the public authorities having jurisdiction, the CONTRACTOR shall place temporary surfacing promptly after backfilling and shall maintain such surfacing for the period of time fixed by said authorities before proceeding with the final restoration of improvements as specified under *Section 01060, "Regulatory Requirements."* Temporary surfacing shall be replaced with permanent pavement as specified in *Section 02460, "Asphaltic Concrete Paving,"* within no more than 30 days after completion of work in an area. At no time shall the CONTRACTOR have more than 2,000 feet of trench with temporary surfacing.
- C. **Permanent Resurfacing:** In order to obtain a satisfactory junction with adjacent surfaces, the CONTRACTOR shall saw cut back and trim the edge so as to provide a clean, sound, vertical joint before permanent replacement of an excavated or damaged portion of pavement. Damaged edges of pavement along excavations and elsewhere shall be trimmed back by saw cutting in straight lines. All pavement restoration and other facilities restoration shall be constructed to finish grades compatible with adjacent undisturbed pavement.
- D. **Restoration of Sidewalks or Private Driveways:** Wherever sidewalks or private roads have been removed for purposes of construction, the CONTRACTOR shall place suitable temporary sidewalks or roadways promptly after backfilling and shall maintain them in satisfactory condition for the period of time fixed by the authorities having jurisdiction over the affected portions before proceeding with the final restoration or, if no such period of times is so fixed, the CONTRACTOR shall maintain said temporary sidewalks or roadways until the final restoration thereof has been made.

1.5 EXISTING UTILITIES AND IMPROVEMENTS

- A. **General:** The CONTRACTOR shall protect all Underground Utilities and other improvements which may be impaired during construction operations as specified under Section 00800CA SGC-17. It shall be the CONTRACTOR's responsibility to ascertain the actual location of all existing utilities and other improvements that will be encountered in its construction operations, and to see that such utilities or other improvements are adequately protected from damage due to such operations. The CONTRACTOR shall take all possible precautions for the protection of unforeseen utility lines to provide for

uninterrupted service and to provide such special protection as may be necessary. The following clearances shall be met for gas mains and electric lines encountered:

1. Five feet from power pole to edge of straight trench.
2. Three feet from edge of slope for sloped trench.
3. Five feet from anchor blocks.
4. Three feet from edge of gas main to edge of pipeline.
5. One foot minimum crossing of gas main with pipeline.
6. A minimum of ten radial feet from the conductors on overhead power lines.

Clearances to be met for telephone are the following:

1. Five feet for anchor blocks and telephone poles.
2. Three feet for sloped trench.

- B. **Utilities to be Moved:** In case it shall be necessary to move the property of any public utility or franchise holder, such utility company or franchise holder will, upon request of the CONTRACTOR, be notified by the OWNER to move such property within a specified reasonable time per **Section 01060**. When utility lines that are to be removed are encountered within the area of operations, the CONTRACTOR shall notify the RESIDENT ENGINEER a sufficient time in advance for the necessary measures to be taken to prevent interruption of service.
- C. Where the proper completion of the WORK requires the temporary or permanent removal and/or relocation of an existing utility or other improvement which is indicated, the CONTRACTOR shall remove and, without unnecessary delay, temporarily replace or relocate such utility or improvement in a manner satisfactory to the RESIDENT ENGINEER and the owner of the facility. In all cases of such temporary removal or relocation, restoration to former location shall be accomplished by the CONTRACTOR in a manner that will restore or replace the utility or improvement as nearly as possible to its former locations and to as good or better condition than found prior to removal. The CONTRACTOR shall arrange with the utility for utility poles to be moved whenever any of the clearances described above cannot be maintained. CONTRACTOR shall pay for such utility pole relocation. No extra compensation shall be paid to the CONTRACTOR for movement of utility poles.
- D. **OWNER's Right of Access:** The right is reserved to the OWNER and to the owners of public utilities and franchises to enter at any time upon any public street, alley, right-of-way, or easement for the purpose of making changes in their property made necessary by the WORK of this Contract.
- E. **Underground Utilities Indicated:** Existing utility lines that are indicated or the locations of which are made known to the CONTRACTOR prior to excavation and that are to be retained, and all utility lines that are constructed during excavation operations shall be protected from damage during excavation and backfilling and, if damaged, shall be immediately repaired or replaced by the CONTRACTOR.
- F. **Underground Utilities Not Indicated:** In the event that the CONTRACTOR damages any existing utility lines that are not indicated or the locations of which are not made known to the CONTRACTOR prior to excavation, a written report thereof shall be made immediately to the RESIDENT ENGINEER in such an event the CONTRACTOR's

attention is directed to the provisions of the California State Requirement as specified in Section 00800CA-SGC-17.

- G. **Approval of Repairs:** All repairs to a damaged utility or improvement are subject to inspection and approval by an authorized representative of the utility or improvement owner before being concealed by backfill or other work.
- H. **Maintaining in Service:** All oil and gasoline pipelines, power, and telephone or the communication cable ducts, gas and water mains, irrigation lines, sewer lines, storm drain lines, poles, and overhead power and communication wires and cables encountered along the line of the WORK shall remain continuously in service during all the operations under the Contract, unless other arrangements satisfactory to the RESIDENT ENGINEER are made with the owner of said pipelines, duct, main, irrigation line, sewer, storm drain, pole, or wire or cable. The CONTRACTOR shall be responsible for all damage due to its operations, and the provisions of this Section shall not be abated even in the event such damage occurs after backfilling or is not discovered until after completion of the backfilling.

1.6 NOTIFICATION BY THE CONTRACTOR

- A. Prior to any excavation in the vicinity of any existing underground facilities, including all water, sewer, storm drain, gas, petroleum products, or other pipelines; all buried electric power, communications, or television cables; all traffic signal and street lighting facilities; and all roadway and state highway rights-of-way the CONTRACTOR shall notify the respective authorities representing the owners or agencies responsible for such facilities as specified under *Section 01060, "Regulatory Requirements."* The CONTRACTOR shall also notify the regional notification center at 1-800-642-2444 at least 2 days, but no more than 14 days, prior to such excavation.

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION (Not Used)

- END OF SECTION -

SECTION 01560 - TEMPORARY ENVIRONMENTAL CONTROLS

PART 1 -- GENERAL

1.1 EXPLOSIVES AND BLASTING

- A. The use of explosives on the WORK will not be permitted.

1.2 DUST AND MUD ABATEMENT

- A. The CONTRACTOR shall furnish all labor, equipment, and means required and shall carry out effective measures wherever and as often as necessary to prevent its operation from producing dust and/or mud in amounts damaging to property, cultivated vegetation, or domestic animals, or causing a nuisance to persons living in or occupying buildings in the vicinity. The CONTRACTOR shall be responsible for any damage resulting from any dust and/or mud originating from its operations. The dust or mud abatement measures shall be continued until the CONTRACTOR is relieved of further responsibility by the RESIDENT ENGINEER.

1.3 RUBBISH CONTROL

- A. During the progress of the WORK, the CONTRACTOR shall keep the site of the WORK and other areas used by it in a neat and clean condition, and free from any accumulation of rubbish. The CONTRACTOR shall dispose of all rubbish and waste materials of any nature occurring at the WORK site, and shall establish regular intervals of collection and disposal of such materials and waste. The CONTRACTOR shall also keep its haul roads free from dirt, rubbish, and unnecessary obstructions resulting from its operations. Disposal of all rubbish and surplus materials shall be off the site of construction in accordance with local codes and ordinances governing locations and methods of disposal, and in conformance with all applicable safety laws, and to the particular requirements of Part 1926 of the OSHA Safety and Health Standards for Construction.

1.4 SANITATION

- A. **Toilet Facilities:** Fixed or portable chemical toilets shall be provided wherever needed for the use of employees. Toilets at construction job sites shall conform to the requirements of Part 1926 of the OSHA Standards for Construction.
- B. **Sanitary and Other Organic Wastes:** The CONTRACTOR shall establish a regular daily collection of all sanitary and organic wastes. All wastes and refuse from sanitary facilities provided by the CONTRACTOR or organic material wastes from any other source related to the CONTRACTOR's operations shall be disposed of away from the site in a manner satisfactory to the RESIDENT ENGINEER and in accordance with all laws and regulations pertaining thereto.

1.5 CHEMICALS

- A. All chemicals used during project construction or furnished for project operation, whether defoliant, soil sterilant, herbicide, pesticide, disinfectant, polymer, reactant or of other classification, shall show approval of either the U.S. Environmental Protection Agency or

the U.S. Department of Agriculture. Use of all such chemicals and disposal of residues shall be in strict accordance with the printed instructions of the manufacturer.

- B. All chemicals used during the project construction or furnished for project operation, whether defoliant, soil sterilant, herbicide, pesticide, fertilizer, disinfectants, polymers, reactants, fuel, oil, hydraulic fluid, detergent, paint, solvent, glue, or any other classification, shall be stored within a containment area that minimizes contact of the chemicals and the storage containers with surface waters. The CONTRACTOR shall notify the RESIDENT ENGINEER to determine if the surface water has been contaminated or may be allowed to be discharged to the storm drains or stream channels. If the surface water flows have become contaminated due to contact with the chemicals or the storage containers, the CONTRACTOR shall provide for removal and/or treatment of the surface water flows at no additional costs to the OWNER. If spills occur in the containment area, the CONTRACTOR shall immediately notify the RESIDENT ENGINEER and contain and cleanup the spill to prevent spilled material from entering storm drains, stream channels, or groundwater or from being absorbed by the underlying pavement or soil.

1.6 TRENCH SPOILS DISPOSAL

- A. All trench spoils shall be hauled in trucks fitted with tarps and tailgates.
- B. All trench spoils shall be disposed of at suitable sites retained by the CONTRACTOR and in compliance with fill and grading permits, copies of which shall be provided to the RESIDENT ENGINEER.
- C. CONTRACTOR shall provide a sign-off from property owner upon construction completion.
- D. See *Section 02200, "Earthwork"* for requirements related to topsoil.

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION (Not Used)

- END OF SECTION -

SECTION 01600 - PRODUCTS, MATERIALS, EQUIPMENT AND SUBSTITUTIONS

PART 1 -- GENERAL

1.1 DEFINITIONS

- A. The word "Products," as used herein, is defined to include purchased items for incorporation into the WORK, regardless of whether specifically purchased for the project or taken from CONTRACTOR's stock of previously purchased products. The word "Materials," is defined as products which must be substantially cut, shaped, worked, mixed, finished, refined, or otherwise fabricated, processed, installed, or applied to form units of work. The word "Equipment" is defined as products with operational parts, regardless of whether motorized or manually operated, and particularly including products with service connections (wiring, piping, and other like items). Definitions in this paragraph are not intended to negate the meaning of other terms used in the Contract Documents, including "specialties," "systems," "structure," "finishes," "accessories," "furnishings," special construction," and similar terms, which are self-explanatory and have recognized meanings in the construction industry.
- B. Neither "Products" nor "Materials" nor "Equipment" includes machinery and equipment used for preparation, fabrication, conveying and erection of the WORK.

1.2 QUALITY ASSURANCE

- A. **Source Limitations:** To the greatest extent possible for each unit of work, the CONTRACTOR shall provide products, materials, and equipment of a singular generic kind from a single source.
- B. **Compatibility of Options:** Where more than one choice is available as options for CONTRACTOR's selection of a product, material, or equipment, the CONTRACTOR shall select an option which is compatible with other products, materials, or equipment. Compatibility is a basic general requirement of product, material and equipment selections.

1.3 PRODUCT DELIVERY AND STORAGE

- A. The CONTRACTOR shall deliver and store the WORK in accordance with manufacturer's written recommendations and by methods and means which will prevent damage, deterioration, and loss including theft. Delivery schedules shall be controlled to minimize long-term storage of products at site and overcrowding of construction spaces. In particular, the CONTRACTOR shall ensure coordination to ensure minimum holding or storage times for flammable, hazardous, easily damaged, or sensitive materials to deterioration, theft, and other sources of loss.

1.4 TRANSPORTATION AND HANDLING

- A. Products shall be transported by methods to avoid damage and shall be delivered in undamaged condition in manufacturers unopened containers and packaging.
- B. The CONTRACTOR shall provide equipment and personnel to handle products, materials, and equipment, including those provided by OWNER, by methods to prevent soiling and damage.

- C. The CONTRACTOR shall provide additional protection during handling to prevent marring and otherwise damaging products, packaging, and surrounding surfaces.

1.5 STORAGE AND PROTECTION

- A. Products shall be stored in accordance with manufacturer's written instructions and with seals and labels intact and legible. Sensitive products shall be stored in weather-tight climate controlled enclosures and temperature and humidity ranges shall be maintained within tolerances required by manufacturer's recommendations.
- B. For exterior storage of fabricated products including pipe, products shall be placed on sloped supports above ground. Products subject to deterioration, including all ferrous metals, shall be covered with impervious sheet covering and heat and ventilation shall be provided to avoid condensation. PVC pipe shall be stored to avoid prolonged exposure to sunlight.
- C. Loose granular materials shall be stored on solid flat surfaces in a well-drained area and shall be prevented from mixing with foreign matter.
- D. Storage shall be arranged to provide access for inspection. The CONTRACTOR shall periodically inspect to assure products are undamaged and are maintained under required conditions.
- E. Storage shall be arranged in a manner to provide access for maintenance of stored items and for inspection.
- F. The CONTRACTOR shall comply with manufacturer's product storage requirements and recommendations.
- G. The CONTRACTOR shall maintain manufacturer-required environmental conditions continually.
- H. The CONTRACTOR shall ensure that surfaces of products exposed to the elements are not adversely affected and that weathering of finishes does not occur.
- I. For mechanical and electrical equipment, the CONTRACTOR shall provide a copy of the manufacturer's service instructions with each item and the exterior of the package shall contain notice that instructions are included.
- J. Products shall be serviced on a regularly scheduled basis, and a log of services shall be maintained and submitted as a record document prior to acceptance by the OWNER in accordance with the Contract Documents.

1.7 PROPOSED SUBSTITUTES OR "OR-EQUAL" ITEM

- A. Whenever materials or equipment are indicated in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the naming of the item is intended to establish the type, function, and quality required. If the name is followed by the words "or equal" indicating that a substitution is permitted, materials or equipment of other suppliers may be accepted if sufficient information is submitted by the

CONTRACTOR to allow the RESIDENT ENGINEER to determine that the material or equipment proposed is equivalent or equal to that named, subject to the following requirements:

1. The burden of proof as to the type, function, and quality of any such substitute product, material or equipment shall be upon the CONTRACTOR.
2. The RESIDENT ENGINEER will be the sole judge as to the type, function, and quality of any such substitute and the RESIDENT ENGINEER'S decision shall be final.
3. The RESIDENT ENGINEER may require the CONTRACTOR to furnish at the CONTRACTOR'S expense additional data about the proposed substitute.
4. The OWNER may require the CONTRACTOR to furnish at the CONTRACTOR'S expense a special performance guarantee or other surety with respect to any substitute.
5. Acceptance by the RESIDENT ENGINEER of a substitute item proposed by the CONTRACTOR shall not relieve the CONTRACTOR of the responsibility for full compliance with the Contract Documents and for adequacy of the substitute.
6. The CONTRACTOR shall be responsible for resultant changes including design and construction changes and all additional costs resulting from the changes which the accepted substitution requires in the CONTRACTOR'S WORK, the WORK of its subcontractors and of other contractors, and shall effect such changes without cost to the OWNER.

B. The procedure for review by the RESIDENT ENGINEER will include the following:

1. If the CONTRACTOR wishes to provide a substitute item, the CONTRACTOR shall make written application to the RESIDENT ENGINEER on a "***Substitution Request Form.***"
2. Unless otherwise provided by law or authorized in writing by the RESIDENT ENGINEER, the "***Substitution Request Form(s)***" shall be submitted within the ***XX***-day period after award of the Contract.
3. Wherever a proposed substitute item has not been submitted within said ***XX***-day period, or wherever the submission of a proposed substitute material or equipment has been judged to be unacceptable by the RESIDENT ENGINEER, the CONTRACTOR shall provide the material or equipment indicated in the Contract Documents.
4. The CONTRACTOR shall certify that the proposed substitute will perform adequately the functions and achieve the results called for by the general design, and be similar and of equal substance to that indicated, and be suited to the same use as that specified.
5. The RESIDENT ENGINEER will evaluate each proposed substitute within a reasonable period of time.

6. As applicable, no shop drawing submittals shall be made for a substitute item nor shall any substitute item be ordered, installed, or utilized without the RESIDENT ENGINEER'S prior written acceptance of the CONTRACTOR'S "Substitution Request Form."
 7. The RESIDENT ENGINEER will record the time required by the RESIDENT ENGINEER in evaluating substitutions proposed by the CONTRACTOR and in making changes by the CONTRACTOR in the Contract Documents occasioned thereby. Whether or not the RESIDENT ENGINEER accepts a proposed substitute, the CONTRACTOR shall reimburse the OWNER for the charges of the RESIDENT ENGINEER for evaluating each proposed substitute.
- C. The CONTRACTOR's "Substitution Request Forms" shall contain the following statements and information which shall be considered by the RESIDENT ENGINEER in evaluating the proposed substitution:
1. The evaluation and acceptance of the proposed substitute will not prejudice the CONTRACTOR's achievement of substantial completion on time.
 2. Whether or not acceptance of the substitute for use in the WORK will require a change in any of the Contract Documents to adopt the design to the proposed substitute.
 3. Whether or not incorporation or use of the substitute in connection with the WORK is subject to payment of any license fee or royalty.
 4. All variations of the proposed substitute from the items originally specified will be identified.
 5. Available maintenance, repair, and replacement service will be indicated. The manufacturer shall have a local service agency (within 50 miles of the site) which maintains properly trained personnel and adequate spare parts and is able to respond and complete repairs within 24 hours.
 6. Itemized estimate of all costs that will result directly or indirectly from acceptance of such substitute, including cost of redesign and claims of other contractors affected by the resulting change.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

- END OF SECTION -

SECTION 01700 - PROJECT CLOSEOUT

PART 1 -- GENERAL

1.1 FINAL CLEANUP

- A. The CONTRACTOR shall promptly remove from the vicinity of the completed work, all rubbish, unused materials, concrete forms, construction equipment, and temporary structures and facilities used during construction. Final acceptance of the WORK by the OWNER will be withheld until the CONTRACTOR has satisfactorily complied with the foregoing requirements for final cleanup of the project site.

1.2 CLOSEOUT TIMETABLE

- A. The CONTRACTOR shall establish a date for acceptance of work. The date shall be established not less than one week prior to beginning any of the foregoing items, to allow the OWNER, the RESIDENT ENGINEER, and their authorized representatives sufficient time to schedule attendance at such activities.

1.3 FINAL SUBMITTALS

- A. The CONTRACTOR, prior to requesting final payment, shall obtain and submit the following items to the RESIDENT ENGINEER for transmittal to the OWNER:
 - 1. Written guarantees, where required.
 - 2. Operating manuals and instructions.
 - 3. Maintenance stock items; spare parts; special tools.
 - 4. Completed record drawings.
 - 5. Certificates of inspection and acceptance by local governing agencies having jurisdiction.
 - 6. Releases from all parties who are entitled to claims against the subject project, property, or improvement pursuant to the provisions of law.

1.4 MAINTENANCE AND GUARANTEE

- A. The CONTRACTOR shall comply with the maintenance and guarantee requirements contained in *Article XX of the General Conditions*.
- B. Replacement of earth fill or backfill, where it has settled below the required finish elevations, shall be considered as a part of such required repair work, and any repair or resurfacing constructed by the CONTRACTOR which becomes necessary by reason of such settlement shall likewise be considered as a part of such required repair work unless the CONTRACTOR shall have obtained a statement in writing from the affected private owner or public agency releasing the OWNER from further responsibility in connection with such repair or resurfacing.

- C. The CONTRACTOR shall make all repairs and replacements promptly upon receipt of written order from the OWNER. If the CONTRACTOR fails to make such repairs or replacements promptly, the OWNER reserves the right to do the WORK and the CONTRACTOR and his surety shall be liable to the OWNER for the cost thereof.

1.5 BOND

- A. The CONTRACTOR shall provide a bond to guarantee performance of the provisions contained in Paragraph "Maintenance and Guarantee" above, *and Article XX of the General Conditions.*

1.6 PROPERTY OWNER SIGN-OFF

- A. The CONTRACTOR must obtain a list of property owner's signatures signifying either no property damage incurred or adequate compensation for property damage. Any disputes over adequate compensation will be settled by the RESIDENT ENGINEER.

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION (Not Used)

- END OF SECTION -

SECTION 02051 - DEMOLITION AND SALVAGE

PART 1 -- GENERAL

1.1 THE REQUIREMENT

- A. The CONTRACTOR shall furnish all tools, equipment, materials, and supplies and shall perform all labor as required for the demolition and removal of mechanical and electrical equipment, and facilities as shown and specified.
- B. The WORK of this Section shall include, but shall not be limited to, the following items:
 - 1. Clearing, grubbing, stripping and removal of top soil and vegetation.
 - 2. Demolition of asphalt pavement, concrete pads, curbs and gutters, fencing, and other features as required to install new piping, equipment, and structures.
 - 3. Demolition, removal, and salvage of existing facilities as shown and specified.

1.2 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

- A. All codes, as referenced herein, are specified in *Section 01090, "Reference Standards."*
- B. All work in connection with demolition and salvage shall be in accordance with applicable local, state, and federal regulations and safety orders, after obtaining required permits and filing required reports.

1.3 DEMOLITION COORDINATION

- A. The CONTRACTOR shall carefully coordinate the extent of demolition in areas where existing utilities shall be reconnected to new facilities and where existing facilities equipment shall remain operational.

1.4 CONTRACTOR SUBMITTALS

- A. Demolition and equipment removal procedures shall be submitted to the RESIDENT ENGINEER for approval. The procedures shall provide for safe conduct of the WORK, careful removal and disposition of materials and equipment, and protection of facilities and property which are to remain undisturbed.

1.5 REPAIR OF DAMAGE

- A. Any damage to existing facilities to remain, as caused by the CONTRACTOR's operations shall be repaired at the CONTRACTOR's expense.
- B. Damaged items shall be repaired or replaced with new materials as required to restore damaged items or surfaces to a condition equal to and matching that existing prior to damage or start of work of this Contract.

1.6 PROTECTION OF EXISTING WORK

- A. Before beginning any cutting, trenching or demolition work, the CONTRACTOR shall carefully survey the existing work and examine the Drawings and Specifications to determine the extent of the WORK. The CONTRACTOR shall take all necessary precautions to prevent damage to existing facilities which are to remain in place, and be responsible for any damages to existing facilities, which are caused by the operations. Damages to such work shall be repaired or replaced to its existing condition at no additional cost to the OWNER. The CONTRACTOR shall carefully coordinate the work of this Section with all other work.

1.7 BURNING

- A. The use of burning at the project site for the disposal of refuse, debris, and waste materials resulting from demolition and site clearing operations will not be permitted.

PART 2 – (NOT USED)

PART 3 -- EXECUTION

3.1 DEMOLITION

- A. Disposal of all materials shall be performed in compliance with applicable local, state, and federal codes and requirements.
- B. Asphalt pavement and concrete curbs and gutters shall be removed as necessary to perform the specified work. The limits of removal shall be sawcut. When the required improvements have been constructed, new asphalt pavement and concrete curbs and gutters shall be constructed as specified and shown.
- C. When existing pipe is removed, the CONTRACTOR shall plug all resulting abandoned connections whether or not shown. Where removed piping is exposed, the remaining piping shall be blind-flanged or fitted with a removable cap or plug.
- D. Where existing buried piping is to be abandoned, the CONTRACTOR shall cut back the abandoned pipe for a distance of 5 feet from outside the respective permanent easement boundary. The abandoned pipe shall be capped at both ends prior to backfill.

3.2 CLEARING, GRUBBING, AND STRIPPING

- A. All construction areas shall be cleared of grass and weeds to at least a depth of six inches and cleared of structures, concrete or masonry debris, trees, logs, upturned stumps, loose boulders, and any other objectionable material of any kind which would interfere with the performance or completion of the WORK, create a hazard to safety, or impair the WORK's subsequent usefulness or obstruct its operation. Trees and other natural vegetation outside the actual lines of construction shall be protected from damage during construction, as directed by the RESIDENT ENGINEER.
- B. Within the limits of clearing, the areas below the natural ground surface shall be grubbed to a depth necessary to remove all stumps, roots, buried logs, and all other objectionable material. Septic tanks, drain fields, and connection lines and any other underground structures, debris or waste shall be totally removed if they are found on the site. All

objectionable material from the clearing and grubbing process shall be removed from the site and wasted in approved safe locations.

3.3 DISPOSAL OF DEMOLISHED MATERIALS

- A. Demolition and removal of debris shall be conducted to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities which shall not be closed or obstructed without permission from the OWNER. Alternate routes shall be provided around closed or obstructed traffic ways.
- B. Site debris, rubbish, and other materials resulting from demolition operations shall be legally removed and disposed of at the CONTRACTOR's expense.

3.4 OCCUPANCY AND POLLUTION CONTROL

- A. Water sprinkling, temporary enclosures, chutes, and other suitable methods shall be used to limit dust and dirt rising and scattering in the construction areas. Pollution control shall comply with government regulations pertaining to environmental protection.
- B. Water shall not be used when it creates hazardous or objectionable conditions such as flooding or pollution.
- C. If site debris, excess construction materials, excess excavated soil, and rubbish are stored on the WORK site or on the CONTRACTOR's work and storage area prior to final disposal or removal from the WORK site, the CONTRACTOR shall construct and use a separate area for storage of such material
- D. The CONTRACTOR shall comply with the provisions of *Section 01060, "Regulatory Requirements."*

3.5 PROTECTION

- A. Safe passage of persons around area of demolition shall be ensured. Operations shall be conducted to prevent damage to adjacent buildings, structures, or other facilities, and people.
- B. Existing landscaping materials, structures, and appurtenances, which are not to be demolished shall be protected and maintained as necessary and in accordance *with Section 01530, "Protection of Existing Facilities."*

3.6 CLEANING

- A. During and upon completion of work, the CONTRACTOR shall promptly remove unused tools and equipment, surplus materials, rubbish, debris, and dust and shall leave areas affected by work in a clean, approved condition.
- B. The CONTRACTOR shall not sweep, grade, or flush surplus materials, rubbish, debris, or dust into storm drains or stream channels.

3.7 MEASUREMENT AND PAYMENT

Full compensation for all demolition and salvage as described herein shall be included in the lump sum bid for CLEARING, GRUBBING, AND RESTORATION, Bid Item No. 2.

- END OF SECTION -

SECTION 02200 - EARTHWORK

PART 1 - GENERAL

1.1 DOCUMENTS

The General Conditions and all other Contract Documents for this project are complimentary and applicable to this Section of the Specifications.

1.2 SCOPE OF WORK

- A. Furnish all labor, materials, equipment, facilities, transportation and services to complete all excavation, backfill, grading and related work as shown on the drawings and/or specified herein.
- B. **Work Included:** The general extent of all excavation, fill and grading is shown on the drawings and includes, but is not necessarily limited to, the following:
 - 1. Removal of excess and unsuitable material from the site.
 - 2. Excavation of material to allow for the placement of underground piping and structures, including any necessary shoring and bracing.
 - 3. Backfilling of underground piping and structures.
 - 4. Preparation of subgrade for concrete slab work and pavement.
 - 5. Finish grading.
- C. Related Work Specified Elsewhere
 - 1. SECTION 02051 – DEMOLITION AND SALVAGE.
 - 2. SECTION 02460 – ASPHALTIC CONCRETE PAVING.
 - 3. SECTION 02565 – DUCTILE IRON PIPE.
 - 4. SECTION 02597 – PVC PRESSURE PIPE, RUBBER JOINTS.
 - 5. SECTION 02831 – CHAIN-LINK FENCES.
 - 6. SECTION 03310 – CAST-IN-PLACE CONCRETE FOR PIPELINES AND APPURTENANT STRUCTURES.
 - 7. SECTION 03400 – PRECAST CONCRETE
 - 8. SECTION 15200 – VALVES, GENERAL

1.3 REFERENCE STANDARDS

- A. Where reference is made herein to the "Standard Specifications" such reference shall mean the California Department of Transportation Standard Specifications dated July 1992.
- B. ASTM D422 Method for Particle-Size Analysis of Soils
- C. ASTM D1557 Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10-lb (4.54-kg) Rammer and 18-inch (457-mm) Drop
- D. ASTM D2922 Methods for Density of Soil and Soil Aggregate in place by Nuclear Methods (shallow depth)
- E. CCR California Code of Regulations Title 22

1.4 DEFINITIONS

- A. **Excavation:** Work shall consist of excavation, storage and any necessary removal of native soil material for structures, foundations and pavement. Excavation may include the removal and disposal of existing pavement, concrete slab materials or contaminated soil.
- B. **Fill:** Soil or soil-rock material placed to raise the existing grade of the site or to backfill excavations.
- C. **On-Site Material:** Material obtained from the project site.
- D. **Import Material:** Material required for earthwork construction in excess of the quantity of suitable material available from required grading, cuts and excavations. Import material may be necessary even though not shown on drawings.
- E. **Select Material:** Material meeting the requirements specified herein.
- F. **Degree of Compaction:** The ratio of the in-place density of constructed fill to the maximum dry density determined by ASTM D1557.
- G. **In-Place Density:** The dry density of constructed fill determined in accordance with the moisture-density gage method, ASTM Designation: D2922.
- H. **California Hazardous Waste:** Defined in the California Code of Regulation, Title 22.

PART 2 - PRODUCTS

2.1 GENERAL BACKFILL

- A. **General Fill Requirements:** Material for general site filling shall be free from sod, large lumps, boulders, rocks, roots, brush or other objectionable material; and should be obtained from on-site material insofar as practical. Should on-site material be unsuitable for general fill in quantity and/or quality, the CONTRACTOR shall furnish and place suitable import material.
- B. **Imported Materials:** Imported materials shall be approved by the RESIDENT ENGINEER prior to use. The CONTRACTOR shall submit for review information on all backfill

materials to be used on the project giving a description of the source of the material, past uses of the property at the source location, quantity of material and the purpose for which it is intended before delivery to the site.

2.2 STRUCTURE BACKFILL

- A. Structures shall be backfilled as detailed on the drawings with select structure backfill, conforming to the requirements of Standard Specification 19-3.06, except that ponding and jetting shall not be permitted, or Class 2 Permeable Material complying with these specifications. Structural backfill is subject to approval by the RESIDENT ENGINEER.
- B. Structure backfill shall be placed in layers, each not exceeding eight inches in thickness (prior to compaction), conditioned with water (or allowed to dry, as necessary) to produce a soil water content of one to three percent above the optimum value, and compacted to 95 percent relative compaction.
- C. Class 2 Permeable Material used as structural backfill shall be placed in layers no more than eight inches thick and moderately compacted by hand-operated equipment to eliminate voids and minimize post-construction settlement.

2.3 CLASS 2 PERMEABLE MATERIAL

- A. Class 2 permeable material shall conform to Standard Specification Section 68-1.025.
- B. A non-woven geotextile fabric equivalent to Mirafi 140N, Fibretex 150, Supac 5NP or Trevia S1115 shall be placed below and behind permeable material.

2.4 PIPE BEDDING AND INITIAL BACKFILL

Bedding material and initial backfill to a minimum depth of three inches above the top of pipe shall be Class 1, Type B permeable material suitable for this purpose, conforming to Standard Specification Section 68-1.025.

2.5 TRENCH BACKFILL

- A. **Controlled Density Fill (CDF):** Optional CDF shall have these proportions by volume:

Cement (1.25 sacks per cubic yard)	2.22%
Fly ash	2.37%
Water	23.74%
Sand	71.67%

- B. **Trench Backfill:** Above the initial backfill, trenches may be backfilled to subgrade with either CDF meeting the requirements of Section 2.05A, or imported material meeting the requirements of Section 2.02. Approved on-site materials with particles exceeding 3 inches in greatest dimension removed may be used as backfill in areas without surface pavement.
- C. **Trench Backfill for Undeveloped Roads:** Above the initial backfill, trenches in undeveloped roads shall be backfilled with uncontaminated native soil.

2.6 FOUNDATION MATERIAL

Soil surfaces exposed by excavation shall be compacted to 90 percent relative compaction (ASTM D1557). The compacted surface shall be covered with a layer of woven geotextile (Mirafi 700X or approved equal), and at least two feet of Class 1, Type B permeable material per Standard Specification 68-1.025.

PART 3 - EXECUTION

3.1 JOB CONDITIONS

- A. **Existing Conditions:** The CONTRACTOR shall, prior to submitting his bid, visit the site and become familiar with actual site and soil conditions
- B. **Protection:** If existing live utilities are encountered, they are to be protected from damage and the proper authorities notified. Service shall not be interrupted except as directed or accepted; allow sufficient time for utility companies to arrange for continuation of services. Record unmarked utility locations on record drawings.

Open excavations, trenches, and the like are to be protected with fences, barricades, covers and railings as required. Every precaution shall be taken to prevent spillage when hauling on or adjacent to any public street or highway. Any spillage shall be promptly removed.

3.2 SAFETY

- A. The CONTRACTOR is solely responsible for excavation safety, including support to all adjacent improvements.
- B. Excavation shall be in accordance with applicable provisions of the State of California Construction Safety Orders. The CONTRACTOR shall, in accordance with Section 6705 of the California Labor Code, submit a detailed drawing to the RESIDENT ENGINEER before excavation begins, showing the design of shoring, bracing, sloping or other provisions to be made for worker protection from the hazard of caving ground during any excavation of five or more feet in depth.
- C. Review by the RESIDENT ENGINEER of the calculations and drawings or inspection performed by the CONTRACTOR's ENGINEER will in no way relieve the CONTRACTOR for full responsibility for the shoring systems. Prior to applying any loading on the shoring, the CONTRACTOR's ENGINEER shall inspect the installation and certify in writing that the shoring system conforms to the drawings and that the material and workmanship are satisfactory. This certification shall be provided to the City and the Owner and be available on the project site in accordance with Article 1717 of the Construction Safety Orders, Title 8, California Administrative Code.
- D. If the CONTRACTOR presents a drawing which varies from shoring system standards established by the Construction Safety Orders, the drawing shall be prepared and signed by a REGISTERED CIVIL ENGINEER licensed by the State of California. Any RESIDENT ENGINEER's review of said drawings will in no way relieve the CONTRACTOR from responsibility and liability for the adequacy of shoring systems and trench excavations.

- E. Trench excavation shall not begin until trench support drawings have been returned by the RESIDENT ENGINEER.
- F. The CONTRACTOR shall pay for and comply with all provisions of the permit required by Section 6500 of the California Occupational Safety and Health Act.
- G. The CONTRACTOR shall submit a Health and Safety Plan stamped by a Certified Industrial Hygienist before mobilization of equipment to the site.
- H. The CONTRACTOR shall be solely responsible for site control to minimize worker and public exposure to contaminants.
- I. During excavation and grading, the CONTRACTOR shall be responsible for dust control measures to reduce the potential for exposure to airborne contaminants.
- J. The CONTRACTOR shall be responsible for covering loads and cleaning equipment before leaving the site to reduce the potential for spreading contaminated material off site.

3.3 SHORING

- A. All vertical trenches deeper than five (5) feet shall be shored in accordance with this section.
- B. The design of shoring support systems is solely the CONTRACTOR's responsibility. Dewatering systems shall be considered in conjunction with the shoring system used.
- C. Shoring systems should be designed to resist the earth pressure distribution prescribed by the safety regulations. Additional hydrostatic pressure of water equivalent shall also be applied. Traffic loads and surcharge weights, such as stockpiled materials, must also be considered in the shoring design.
- D. Full compensation for doing all work required to brace excavations and for compliance with these requirements shall be included in the items of work which require the shoring.

3.4 PREPARATION OF SUBGRADE

Strip surface vegetation, weeds, and at least the top six inches from areas underlying surface structures and areas to be paved. Excavate soft, wet, or otherwise unsuitable base grade to firm, unyielding soil.

3.5 EXCAVATION

- A. CONTRACTOR shall notify the RESIDENT ENGINEER of any site condition not reflected on the drawings or in these specifications, such as conflict in grade, bad soil, or unexpected utility lines.
- B. Excavate to the lines, grades and dimensions shown on the plans. Excavations shall be made to such width outside the lines of the structure to be constructed as may be required for proper working methods, the erection of forms, and the protection of work. Any resulting over-excavation extending beyond the lines, grades, and dimensions shown on the plans shall be backfilled with material complying with these specifications at no additional cost to the Owner.

- C. Care shall be taken to preserve foundation surfaces in an undisturbed condition, and excavation at or near property lines shall be performed in a manner that minimizes disturbances to adjacent property. Any foundation surfaces disturbed without the RESIDENT ENGINEER's authorization shall be replaced at the CONTRACTOR's expense with compacted gravel fill or other material approved by the RESIDENT ENGINEER so that by test, the bearing capacity of the replacement material is equal to or better than the undisturbed foundation material.
- D. Existing structures and completed work shall be adequately braced and cared for so that no damage will result.
- E. If previous trenches are encountered, any loose materials shall be excavated, backfilled and recompacted in accordance with these specifications.
- F. Excavated material unsuitable for backfill or in excess of the amount required for backfill shall be disposed of by the CONTRACTOR off the site at his expense.

3.6 FILLING

- A. Prior to the placement of fill, the RESIDENT ENGINEER shall be notified of the source of materials and their suitability for the particular fill application. Work shall not be backfilled without RESIDENT ENGINEER's approval. Any work so covered prior to approval shall be uncovered at the CONTRACTOR's expense.
- B. All debris, form work, etc. shall be removed from the excavation prior to backfilling.
- C. Pipe shall be supported during the placement and compaction of bedding and backfill.
- D. Fill materials shall be spread in level layers not exceeding eight inches in uncompacted thickness and moisture conditioned to near optimum moisture content of the material. Each layer shall be compacted as required in Section 3.7.
- E. Granular backfill shall be tamped mechanically or manually along the sides of pipes and structures to minimize voids in the material between the pipe or structure and excavation walls. No flooding or jetting shall be used to compact bedding or backfill materials.
- F. **Moisture Content:** Fill materials shall have uniform moisture content necessary for compaction to the specified dry density.
- G. No fill shall be placed during conditions that will alter the moisture content of the fill material sufficiently to make adequate compaction impossible. After placing operations have been stopped due to adverse conditions, no additional fill material shall be placed until the last layer compacted has been checked and found to be compacted to the specified densities.
- H. **Tests:** Tests are to be made on each layer of fill to assure adequate compaction throughout the entire area. If the dry densities are not satisfactory, the CONTRACTOR will be required to recompact each layer and/or work area as necessary to achieve the specified densities. Compaction testing will be performed in accordance with ASTM D1557.

3.7 COMPACTION

Fill materials shall be compacted so that the relative compaction is as follows:

Pipe Bedding	95%
Trench Backfill under Paved Areas	95%
Structural Backfill	95%
Trench Backfill under Non-Paved Areas	90%
All Other Backfill	90%

3.8 FINISHED GRADING

All grades shall be finished to their preconstruction condition except where otherwise specified in the construction documents.

3.9 MEASUREMENT AND PAYMENT

No separate payment shall be made for earthwork costs. Earthwork costs should be incorporated into other items of work.

- END OF SECTION -

SECTION 02590 – WATER METERS

PART 1. -- GENERAL

1.1 THE REQUIREMENT

- A. The CONTRACTOR shall furnish and install water meters, complete in place, all in accordance with the requirements of the Contract Documents.
- B. Related Work Specified Elsewhere

1. SECTION 02200 – EARTHWORK

1.2 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

- A. Commercial Standards:

AWWA Manual M23 PVC Pipe - Design and Installation

1.3 CONTRACTOR SUBMITTALS

- A. **Shop Drawings:** CONTRACTOR shall submit shop drawings of pipe, fittings, and appurtenances in accordance with the requirements in the General Requirements, and the requirements of the referenced standards.
- B. **Certifications:** The CONTRACTOR shall furnish a certified affidavit of compliance for all pipe and other products or materials furnished under this Section of the Specifications, as specified in the referenced standards and the following supplemental requirements:
 - 1. Meters. Each meter shall be certified to exceed AWWA Flow and Disc Nutations for the 5/8"x 3/4", 1", 2", and 3" Meters.
 - 2. Sustained pressure test reports.
- C. All expenses incurred in making samples for certification of tests shall be borne by the CONTRACTOR.

1.4 QUALITY ASSURANCE

- A. **Inspection:** All pipe shall be subject to inspection at the place of manufacture in accordance with the provisions of the referenced standards as supplemented by the requirements herein. The CONTRACTOR shall notify the RESIDENT ENGINEER in writing of the manufacturing starting date not less than 14 calendar days prior to the start of any phase of the pipe manufacture.
- B. During the manufacture of the pipe, the RESIDENT ENGINEER shall be given access to all areas where manufacturing is in process and shall be permitted to make all inspections necessary to confirm compliance with the Specifications.

- C. **Tests:** Except as modified herein, all materials used in the manufacture of the pipe shall be tested in accordance with the requirements of this Section of the Specifications, as specified in the referenced standards, as applicable.
- D. The CONTRACTOR shall perform said material tests in accordance with the requirements of the Contract Documents. The RESIDENT ENGINEER shall have the right to witness all testing conducted by the CONTRACTOR provided that the CONTRACTOR'S schedule is not delayed for the convenience of the RESIDENT ENGINEER.
- E. In addition to those tests specifically required, the RESIDENT ENGINEER may request additional samples of any material for testing by the OWNER. The additional samples shall be furnished at no additional cost to the OWNER.

PART 2. -- PRODUCTS

2.1 GENERAL

- A. The service shall terminate with an angle meter stop in a meter box. The service shall be located on a lot line unless otherwise approved by the Engineer, and at right angles to the center of the right of way, with a minimum of five feet between the water service and sewer lateral. Water services will not be permitted in driveway areas. Meter location shall be as follows:
 - (a) Where concrete or machine formed asphaltic concrete curbs exist or are to be constructed, six inches back of curb.
 - (b) Where there are no curbs, the location of the box shall be as approved by the Engineer in a location readily accessible to the District.
 - (c) The standard lateral size for a residential lot is one-inch. Other size laterals shall be as approved by the Engineer and/or as noted on the drawings. See Standard Details W-202 and W-203.
 - (d) Meters shall be installed per AWWA C700-95.

2.2 METER

- A. Meters shall be bronze disc meters with bronze meter housings.
- B. Meters shall be certified to meet or exceed AWWA C700.
- C. 5/8" to 2" meters shall be positive displacement disc type meters.
- D. 5/8"x3/4" meters shall be warranted 5 years for new meter accuracy standards per AWWA C700-95.
- E. 1" meters shall be warranted 3 years for new meter accuracy standards per AWWA C700-95.
- F. 2" meters shall be warranted 2 years for new meter accuracy standards per AWWA C700-95.
- G. All meters shall be warranted for a period of 12 months for materials and workmanship.
- H. 5/8" to 2" meters shall be Badger Recordall Disc and 3" meters shall be Badger Recordall Turbo or equal.

2.3 SUB-METERING

- A. Each residential unit in each building shall be metered with furnished with an automated radio frequency meter reading system.
- B. Submetering shall be placed within each building under the oversight of the District and the California State University Monterey Bay.

- C. The Contractor shall provide meters, associated automated radio frequency meter reading system, hardware and software to remotely read the water meters for each building.

2.4 PIPE

- A. The pipe diameter and dimension ratio shall be as shown on the Contract Drawings.
- B. The pipe shall be furnished complete with rubber gaskets, and all specials and fittings shall be provided as required in the Contract Documents. The Dimension Ratios for 4-inch through 12-inch PVC pressure pipe shall conform to Table 1 of AWWA C900. The Dimension Ratios for 14-inch and larger PVC pressure pipe shall conform to Table 2 of AWWA C905.

2.5 FITTINGS

- A. Each fitting shall be clearly labeled to identify its size and pressure class.

PART 3. -- EXECUTION

3.1 GENERAL

- A. Service Taps. Water service taps shall be located in accordance with MCWD Standard Detail W-204. "Hot" service taps on existing mains under pressure will be made by the District. The Contractor shall perform all necessary excavation, backfill, compaction and pavement repair.
- B. Service Pipe. All pipe for water services two-inches and smaller shall be polyethylene tubing conforming to AWWA C901. Polyethylene tubing dimensions shall conform to copper tube size. All-fittings used in the assembly of polyethylene service lines shall be of bronze, as manufactured by the James Jones Company of Los Angeles, the Mueller Company of Decatur, Illinois, Ford Meter Box Company of Wabash, Indiana or approved equal. All bronze fittings, except gate valves, shall conform with ASTM B62. Additional requirements are included in section 100-3.

Three inch meters shall use 4-inch diameter AWWA C900 PVC pipe, reduced as shown on Standard Detail W-203.

- C. Water Meter Boxes. Concrete water meter boxes for services 2-inch and smaller shall be precast with a fibrelyte lid; Christy, Brooks or approved equal. Meter boxes for services 3-inch and larger shall be precast with a reinforced concrete lid and concrete reading lid.

Boxes shall be set true to line and grade and shall be flush with the sidewalks or curbs. The meter boxes shall be installed after the curbs are constructed and the sidewalk areas are graded.

3.2 HANDLING AND STORAGE

- A. **Handling:** Pipe, fittings and accessories shall be carefully inspected before and after installation and those found defective shall be rejected. Pipe and fittings shall be free from fins and burrs. Before being placed in position, pipe, fittings, and accessories shall be cleaned, and shall be maintained in a clean condition. Proper facilities shall be provided for lowering sections of pipe into trenches. Under no circumstances shall pipe, fittings or any other material be dropped or dumped into trenches.

- B. **Storage:** Pipe should be stored, if possible, at the job site in unit packages provided by the manufacturer. Caution should be exercised to avoid compression damage or deformation to bell ends of the pipe. Pipe should be stored in such a way as to prevent sagging or bending and protected from exposure to direct sunlight by covering with an opaque material while permitting adequate air circulation above and around the pipe. Gaskets should be stored in a cool, dark place out of the direct rays of the sun, preferably in original cartons.

3.3 INSTALLATION

- A. **Meter Installation.** Application for service, shall be made in accordance with the District's Rates and Rules. All meters shall be furnished and installed by the District in accordance with Standard Drawings W202 or W203. Cast-iron meter yoke, meter stop, fittings and service pipe are to be furnished by the Contractor.

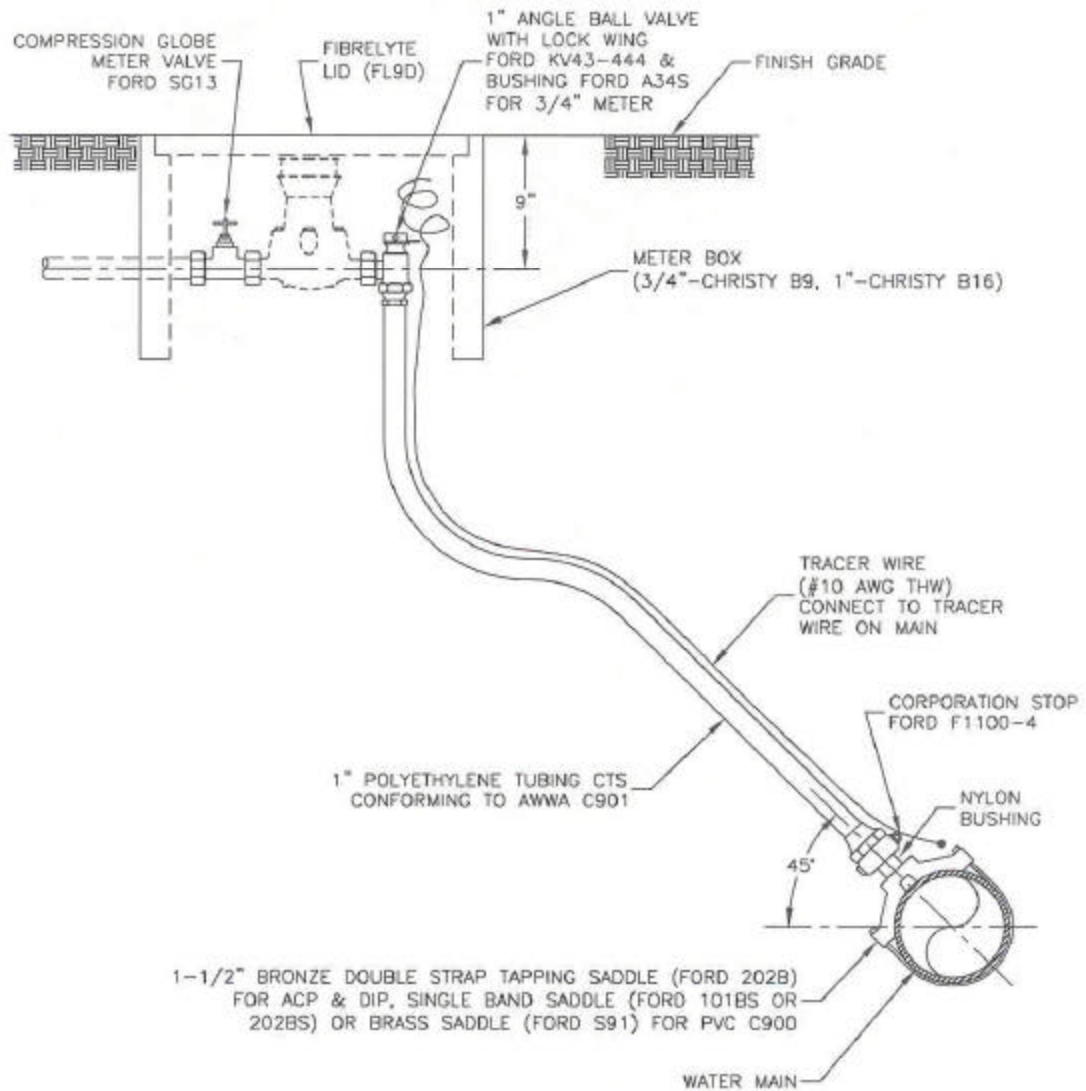
3.5 CLEANING, FLUSHING, AND TESTING

- A. **CONTRACTOR** shall clean, flush, and test polyvinyl chloride pipelines in accordance with the requirements of *Section 02666, "Water Pipeline Testing."*

3.6 MEASUREMENT AND PAYMENT

Compensation for meters is covered in "*Section.....*"

- END OF SECTION -



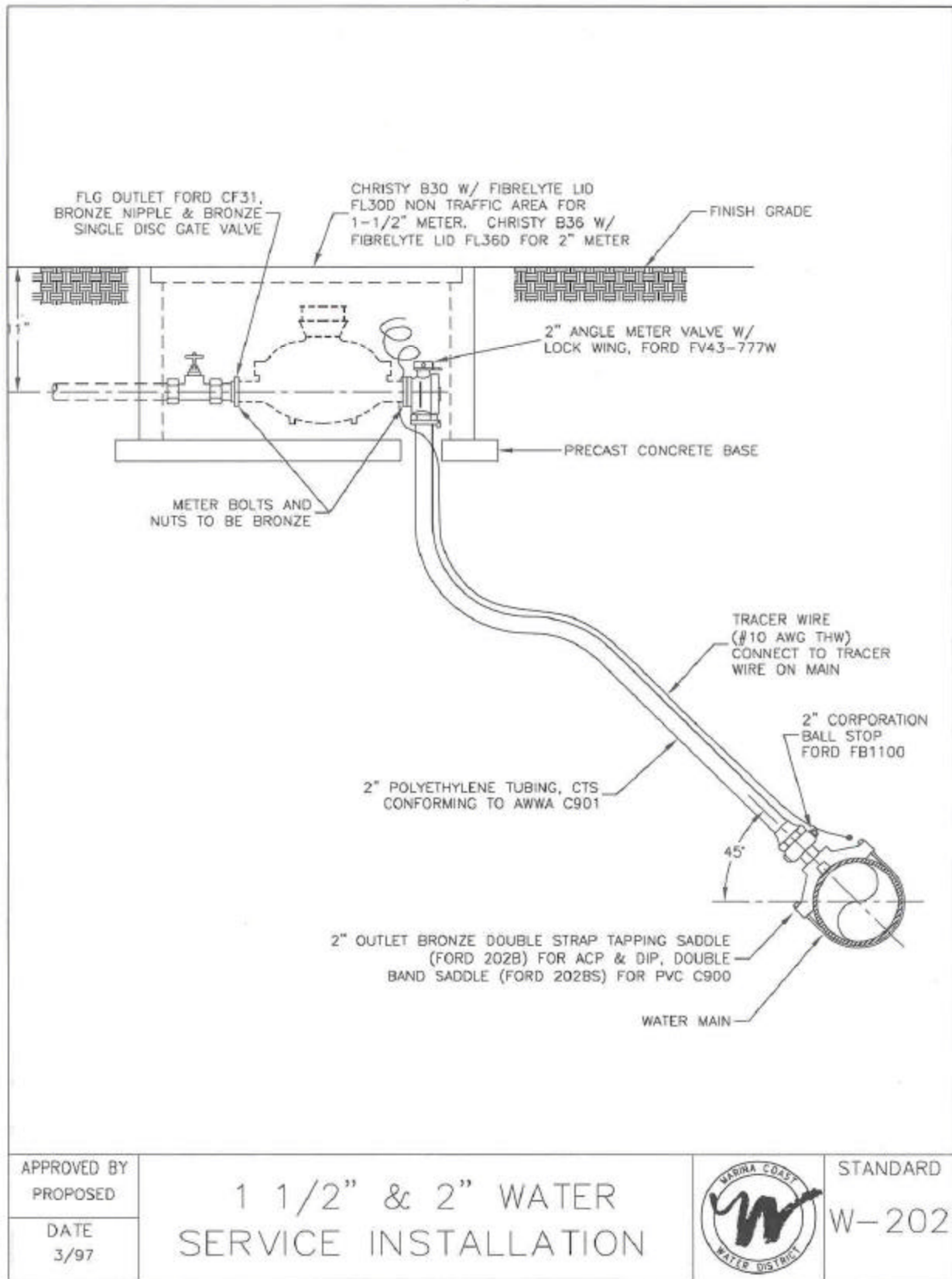
APPROVED BY
DISTRICT ENGINEER

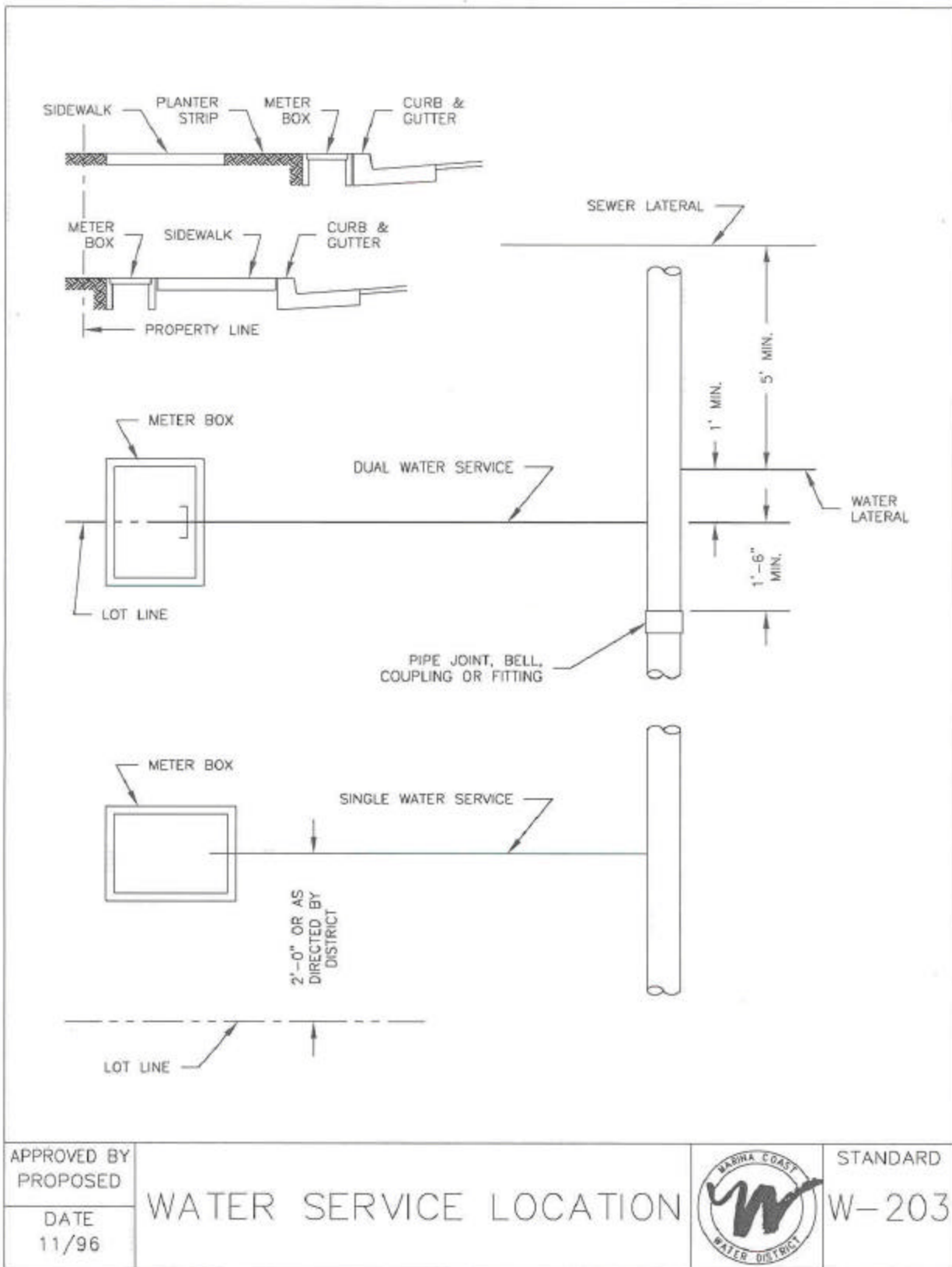
DATE
11/99

3/4" & 1" SERVICE WATER INSTALLATION



STANDARD
W-201







MARINA COAST WATER DISTRICT

PRESSURE REDUCING VALVE AND GATE VALVE REPLACEMENT PROJECT

(Preliminary Specifications and Plans)

Bidding Requirements
Conditions of the Contract
Technical Specifications

Month/Year

CONTRACT DOCUMENTS FOR
PRESSURE REDUCING VALVE AND
GATE VALVE REPLACEMENT PROJECT

CONTRACT _____

Marina Coast Water District
11 Reservation Road
Marina, California 93933

Board of Directors

T. Moore, President
E. Randle
D. Brown
K. Nishi

Submitted _____
Registered Engineer (if required and must be same as person who prepared plans)

Approved _____
District Engineer

BID AND CONTRACT DOCUMENTS
FOR
BID/CONTRACT NO.

PROJECT: Pressure Reducing Valve and Gate Valve Replacement

FOR: MARINA COAST WATER DISTRICT
11 RESERVATION ROAD
MARINA, CA 93933

Summary of Contents

Section**Page**

I. Invitation to bidders

Pre-bid Conference and Site Inspection
Bid Opening (Due date and Time)

II. Information to bidders

- A. Bid Requirements and Conditions
- B. Award of Contract
- C. Execution of Contract
- D. Notice to Proceed
- E. Failure to Execute Contract
- F. Prevailing Wage Requirements
and Penalties for Non-compliance
- G. Disclosure of Bid Information
- H. Notice of Completion

III. Bid Forms

- A. Bid Form
- B. Schedule of Bid Items
- C. Contractor's License Certification
- D. Affirmative Information Statement
- E. Designation of Subcontractors
- F. Bidder's Bond
- G. Designation of Insurance Agent or Broker
- H. Payment Bond
- I. Performance Bond
- J. Non-Collusion Declaration
- K. Stop Work Notice
- L. Prevailing Wage Statement

IV. Construction Contract

V. Special Instructions

- Monthly progress payments with 10% retention are applicable to this project.

VI. Technical Specifications

VII. Plans

- The plans for this project can be purchased for \$_____ from:

Marina Coast Water District
Attn: David B. Meza, P.E.
11 Reservation Road
Marina, CA 93933

Reference: "Plan Description. (_____ sheets.)

SCHEDULE OF BID ITEMS

FOR

PROJECT TITLE: Pressure Reducing Valve and Gate Valve Replacement Project

BID/CONTRACT NO: _____

ADDENDA:

If addendum is made to this bid, please acknowledge receipt. Bidder acknowledges receipt of Addendum (if needed) # ___, ___, ___, ___. .

Bid Schedule

ITEM NO.	DESCRIPTION OF WORK	ESTIMATED QUANTITY	UNIT	UNIT PRICE	AMOUNT
1	Mobilization	1	LS		
2	Clearing and Grubbing	1	LS		
3	Furnish and Install PRV Valve and Vault	23	EA		
4	Furnish and Install Gate Valve	72	EA		
Bid Total:					
Name of Bidder or Contractor:					

NOTE: AWARD SHALL BE "ALL OR NONE" or by "individual item(s)".

All prices quoted shall include all delivery costs and applicable taxes and permits.

COMPANY NAME: _____

AUTHORIZED SIGNATURE: _____

DATE: _____

PART VI

CONTRACT NO:

TECHNICAL SPECIFICATIONS – CONTENTS

DIVISION 1 – GENERAL REQUIREMENTS

SECTION 01010 – SUMMARY OF WORK

SECTION 02590 – PRESSURE REDUCING VALVES

SECTION 01010 - SUMMARY OF WORK

PART 1 -- GENERAL

1.1 GENERAL

- A. The WORK to be performed under this Contract shall consist of furnishing all plant, tools, equipment, materials, supplies, and manufactured articles and furnishing all labor, transportation, and services, including fuel, power, water, and essential communications, and performing all work, or other operations required for the fulfillment of the Contract in strict accordance with the Contract Documents. The WORK shall be complete, and all work, materials, and services not expressly indicated or called for in the Contract Documents which may be necessary for the complete and proper construction of the WORK in good faith shall be provided by the CONTRACTOR as though originally so indicated, at no increase in cost to the OWNER. Such other items or details not mentioned above, that are required by the Plans, various applicable codes, standards, specifications, and these specifications shall be performed, planned, constructed, or installed. The Contract Time is further defined in paragraph 3.1 in this Section.

1.2 SCOPE-OF-WORK COVERED BY CONTRACT DOCUMENTS

- A. The WORK of this Contract comprises of the installation of water meters for residential areas and landscape areas within the California State University Monterey Bay vicinity with the Presidio of Monterey vicinity. The area is as shown as shown on the construction plans. The WORK includes the secure installation of approximately 1,538 meters for the Presidio of Monterey and approximately 194 meters and some 1,153 sub-meters for California State University Monterey Bay.
- B. The WORK is located in Marina, Seaside and Monterey County, California in Monterey County. The meter locations are located on publicly owned easements, some are in County road rights of way, and some are in the City of Marina and City of Seaside rights of way.

1.3 CONTRACT METHOD

- A. The WORK, hereunder will be constructed under a single unit-price contract.

1.4 WORK BY OTHERS

- A. The CONTRACTOR's attention is directed to the fact that work may be conducted at or near the site by other contractors during the performance of the WORK under this Contract. The CONTRACTOR shall conduct its operations so as to cause a minimum of interference with the WORK of such other contractors, and shall cooperate fully with such contractors to provide continued safe access to their respective portions of the site, as required to perform work under their respective contracts.
- B. **Interference With Work On Utilities:** The CONTRACTOR shall cooperate fully with all utility forces of the OWNER or forces of other public or private agencies engaged in the relocation, altering, or otherwise rearranging of any facilities which interfere with the

progress of the WORK, and shall schedule the WORK so as to minimize interference with said relocation, altering, or other rearranging of facilities.

- C. **Concurrent Work by Other Contractors:** The CONTRACTOR's attention is directed to the fact that work may be conducted adjacent to the site by other contractors during the performance of the WORK of this Contract.

1.5 CONTRACTOR USE OF PROJECT SITE

- A. The CONTRACTOR's use of the project site shall be limited to its construction operations, including on-site storage of materials, on-site fabrication facilities, and field offices.
- B. The CONTRACTOR shall obtain any staging and storage area and associated permits and approvals needed outside the construction easement and permanent easement areas shown in the Contract Documents.
- D. The CONTRACTOR shall obtain trench spoils disposal site(s) and necessary fill and grading permits.
- D. Temporary Construction Easement for staging and storage is defined in *Section 01550 "Site Access and Storage."*

1.6 PROJECT MEETINGS

A. **Preconstruction Conference:**

1. Prior to the commencement of WORK at the site, one preconstruction conference will be held at a mutually agreed time and place which shall be attended by the CONTRACTOR'S Project Manager, its Superintendent, and its Subcontractors as the CONTRACTOR deems appropriate. Other attendees will be:
 - a. RESIDENT ENGINEER.
 - b. Representatives of OWNER.
 - c. Governmental representatives as appropriate.
 - d. Others as requested by RESIDENT ENGINEER, CONTRACTOR, or OWNER.
2. The CONTRACTOR shall bring to the conference the submittals specified in *Section 01300, "Contractor Submittals."*
3. The purpose of the conference is to designate responsible personnel and establish a working relationship. Matters requiring coordination will be discussed and procedures for handling such matters established. The complete agenda will be furnished to the CONTRACTOR prior to the meeting date. However, the CONTRACTOR should be prepared to discuss all of the items listed below.
 - a. Status of CONTRACTOR's insurance and bonds.

- b. CONTRACTOR's tentative schedules.
 - c. Transmittal, review, and distribution of CONTRACTOR's submittals.
 - d. Processing applications for payment.
 - e. Maintaining record documents.
 - f. Critical work sequencing.
 - g. Field decisions and Change Orders.
 - h. Use of project site, office and storage areas, security, housekeeping, and OWNER's needs.
 - i. Major equipment deliveries and priorities.
 - j. CONTRACTOR's assignments for safety and first aid.
- 4. The RESIDENT ENGINEER will preside at the preconstruction conference and will arrange for keeping and distributing the minutes to all persons in attendance.
 - 5. The CONTRACTOR and its Subcontractors should plan on the conference taking 1 full working day. The morning will cover the items listed in paragraph 3, and the afternoon will be spent on reviewing the plans and specifications, in extensive detail, with the RESIDENT ENGINEER and the OWNER.

B. Progress Meetings:

- 1. The CONTRACTOR shall attend regular on-site progress meetings at least weekly -and at other times as requested by RESIDENT ENGINEER or as required by progress of the WORK. The CONTRACTOR, RESIDENT ENGINEER, and all Subcontractors active on the site must attend each meeting. CONTRACTOR may at its discretion request attendance by representatives of its Suppliers, manufacturers, and other Subcontractors.
- 2. The RESIDENT ENGINEER shall preside at the meetings and will arrange for keeping and distributing the minutes. The purpose of the meetings will be to review the progress of the WORK, maintain coordination of efforts, discuss changes in scheduling, and resolve other problems which may develop. During each meeting, the CONTRACTOR is required to present any issues which may impact his work, with a view to resolve these issues expeditiously.

1.7 DEFINITIONS APPLICABLE TO TECHNICAL SPECIFICATIONS

- A. The following words shall have the defined meaning in the Technical Portions of the WORK:

Indicated -is a word used to direct the CONTRACTOR-to information contained on the drawings or in the Specifications. Terms such as "shown," "noted,"

“scheduled,” and “specified” also may be used to assist in locating information but no limitation of location is implied or intended.

Furnish	-means to supply and deliver to the site, to unload and unpack ready for assembly, installation, testing, and startup.
Install	-defines operations at the site including assembly, erection, placing, anchoring, applying, shaping to dimension, finishing, curing, protecting, and cleaning, ready for the OWNER's use.
Provide	-is defined as furnish and install, test, adjust, program, and demonstrate proper operation if required by the specification, ready for the intended use.
Installer	-a person or firm engaged by the CONTRACTOR or its subcontract or any subcontractor for the performance of installation, erection, or application work at the site. Installers must be expert in the operations they are engaged to perform.

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION

3.1 CONTRACT TIME

- A. **FULL COMPLETION:** The WORK shall be fully completed **200** days after the commencement date started in the Notice to Proceed. Full completion shall be defined as complete installation and operation of the WORK.

END OF SECTION -

SECTION 01025 - MEASUREMENT AND PAYMENT

PART 1 -- GENERAL

1.1 SCOPE

- A. Measurements of the completed work shall be in accordance with, and by instruments and devices calibrated to United States Standard Measures, and the units of measurement for payment, and the limits thereof, shall be made as shown on the Plans, Specifications, General Requirements, and Supplementary Conditions.

1.2 UNITS OF MEASUREMENT

- A. Measurements shall be in accordance with U.S. Standard Measures. A pound is an avoirdupois pound. A ton is 2,000 pounds avoirdupois. The unit of liquid measure is the U.S. gallon. The unit of length is feet. The unit of volume is cubic yards.

1.3 CERTIFIED WEIGHTS

- A. When payment is to be made on the basis of weight, the weighing shall be done on certified platform scales, or when approved by the RESIDENT ENGINEER, on a completely automated weighing and recording system. The CONTRACTOR shall furnish the RESIDENT ENGINEER with duplicate licensed weighmaster's certificates showing the actual net weights. The OWNER will accept the certificates as evidence of the weights delivered.

1.4 METHODS OF MEASUREMENT

- A. Materials and items of work which are to be paid for on the basis of measurement shall be measured in accordance with the method stipulated in the particular sections involved. In determining quantities, all measurements shall be made in a horizontal plane unless otherwise specified.
- B. Material not used from a transporting vehicle shall be determined by the RESIDENT ENGINEER and deducted from the certified tag.
- C. When material is to be measured and paid for on a volume basis and it would be impractical to determine the volume, or when requested by the CONTRACTOR in writing and approved by the RESIDENT ENGINEER in writing, the material will be weighed and converted to volume measurement for payment purposes. Factors for conversion from weight measurement to volume measurement will be determined by the RESIDENT ENGINEER and shall be agreed to by the CONTRACTOR before such method of measurement of pay quantities will be adopted.
- D. Full compensation for all expense involved in conforming to the above requirements for measuring and weighing materials shall be considered as included in the unit prices paid for the materials being measured or weighed and no additional allowances will be made therefore.
- E. Quantities of material wasted or disposed of in a manner not called for under the Contract; or rejected loads of material, including material rejected after it has been placed by reason

of failure of the CONTRACTOR to conform to the provisions of the Contract; or material not unloaded from the transporting vehicle; or material placed outside the lines indicated on the plans or given by the RESIDENT ENGINEER; or material remaining on hand after completion of the Contract, will not be paid for and such quantities will not be included in the final total quantities. No compensation will be allowed for hauling rejected material.

- F. Bid items include all work necessary to complete the specific item described and not otherwise included in other bid items. The CONTRACTOR shall include in each bid item all costs required to construct the work in accordance with the Contract Documents.

PART 2 -- DESCRIPTION OF BID ITEMS

Mobilization/Demobilization, Bid Item No. 1

The lump sum bid price for this item shall constitute full compensation for mobilization and demobilization including but not limited to equipment shipping and delivery, equipment set up, materials shipping and delivery, utility coordination and permitting. Mobilization bid item shall not be in excess of 10 percent of the total bid schedule. Payment for mobilization shall conform to Section 11-1.02 of the State Standard Specifications.

Clearing, Grubbing, and Restoration, Bid Item No. 2

The lump sum bid price for this item shall constitute full compensation for site preparation including but not limited to: clearing, grubbing and stripping on-site as necessary to remove all interfering or objectionable material from work areas within which excavation is to be conducted, or storage of excavated materials or fill is to be made; demolition of existing structures and features identified on the drawings, and removal and disposal of such material. Payment of this item also constitutes full compensation for the replacement of any permanent facilities damaged, removed, or relocated during construction including, but not limited to utilities, fencing, and power poles.

Pressure Reducing Station; Piping and Fittings, Valves, Isolating Valves, Pressure Gages, and Pipe Supports for, Bid Item No. 3

The measurement of payment shall be for each pressure reducing station and shall constitute full compensation for all material, labor, equipment, tools and services necessary to furnish, install, test, and disinfect piping, valves, pipe supports, and all necessary piping, fittings and appurtenances to and from existing piping. Piping shall include all; below-grade 12-inch pipe from, the upstream 18"x12" tee to the downstream 18"x12" tee, two (2) 12-inch DIP risers, fittings and pipe restraining devices, 10-inch DIP spools, and 4-inch DIP spools. Valves shall include; two (2) 12-inch butterfly valves, two (2) 4-inch gate valves, an air-release valve, a 4-inch pressure reducing valve with a low-flow bypass, and a 12-inch pressure reducing valve. The price includes the two (2) pressure gages and appurtenances required to connect the gages to the pipe. Pipe linings, coatings, and polyvinyl wrappings as required are also included under this bid item.

Gate Valves Below-Grade, Bid Item No.4

The unit bid price shall constitute full compensation for all material, labor, equipment, tools, and services necessary to install all buried butterfly valves and associated fittings specified herein. The price includes furnishing and installing a valve box for each buried butterfly valve, and butterfly valve thrust blocks if so used or required. Butterfly valve linings, coatings, and polyvinyl wrappings are included under this bid item.

This price shall also constitute full compensation for providing all labor, materials, tools and equipment for all excavation and filling as required to install the valves. All shoring and bracing, complete and in place, required for these excavations are also included in this unit price.

-END OF SECTION -

SECTION 15200 - VALVES

PART 1 - GENERAL

1.1 DOCUMENTS

The General Conditions and all other Contract Documents for this project are complementary and applicable to this section of the Specifications.

1.2 SCOPE OF WORK

A. Work Included

All work necessary to furnish and install all valves as shown on the drawings and specified herein.

B. Related Work Specified Elsewhere

1. SECTION 02666 – WATER PIPELINE TESTING
2. SECTION 03310 – CAST-IN-PLACE CONCRETE FOR PIPELINES AND APPURTENANT STRUCTURES
3. SECTION 03400 – PRECAST CONCRETE
4. SECTION 05500 – MISCELLANEOUS METALWORK

1.3 REFERENCE STANDARDS

Standards listed below are a part of this section as specified and modified. In case of conflict between the requirements of this section and those of listed standards, the requirements of this section shall prevail. Where two or more standards are at variance, the most restrictive requirement shall apply.

ANSI B16.1	Cast Iron Pipe Flanges and Flanged Fittings, Class 25, 125, 250, and 800
ANSI B16.5	Pipe Flanges and Flanged Fittings, Steel Nickel Alloy and Other Special Alloys
ASTM A126	Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings
ASTM A536	Specifications for Ductile Iron Castings
ASTM B62	Specification for Composition Bronze or Ounce Metal Castings
ASTM B584	Specification for Copper Alloy Sand Castings for General Applications
ANSI/AWWA C500	Gate Valves for Water and Sewerage Systems.

ANSI/AWWA C504	Rubber-Seated Butterfly Valves.
ANSI/AWWA C509	Resilient-Seated Gate Valves for Water Supply Service
ANSI/AWWA C110	Ductile Iron and Grey Iron Fittings, 3-in. through 48-in., for Water and Other Liquids
ANSI/AWWA C512	Air-Release, Air/Vacuum, and Combinations Air Valves for Waterworks Service.
ANSI/AWWA C550	Protective Epoxy Interior Coatings for Valves and Hydrants

1.4 SUBMITTALS

- A. **Product Data:** The CONTRACTOR shall submit shop drawings, manufacturer's product data and installation instructions demonstrating that the proposed valve is in compliance with the referenced standards as well as the intended service. If drawings are returned disapproved or not stamped, they shall be revised or corrected as necessary and resubmitted for review, approval, and stamping.
- B. **Certification:** Certified test reports with each delivery that the valve(s) delivered complies with this specification.

1.5 QUALITY CONTROL

- A. **Acceptable Manufacturers:** The CONTRACTOR shall provide valves with the manufacturer's name and pressure rating clearly marked on the outside of the body. Valves shall be of the same manufacturer where possible.
- B. **Valve Connections:** Suitable valves shall be provided to connect to adjoining piping as specified for pipe joints.

PART 2 - PRODUCTS

2.1 VALVES

- A. **General:** The CONTRACTOR shall furnish all valves, gates, valve-operating units, stem extensions, and other accessories as shown or specified. All valves and gates shall be new and of current manufacture. Shut-off valves mounted higher than 5 feet - 6 inches above working level shall be provided with chain operators.
- B. **Valve Flanges:** The flanges of valves shall be in accordance with ANSI B16.1, B16.5 and ASTM A126.
- C. **Gate Valve Stems:** Where subject to dezincification, gate valve stems shall be of bronze conforming to ASTM B62, containing not more than 5 percent of zinc nor more than 2 percent of aluminum. Gate valve stems shall have a minimum tensile strength of 60,000 psi, a minimum yield strength of 40,000 psi, and an elongation of at least 10 percent in 2 inches, as determined by a test coupon poured from the same ladle from which the valve

stems to be furnished are poured. Where dezincification is not a problem, bronze conforming to ASTM B584 may be used.

- D. **Protective Coating:** The valve manufacturer shall certify in writing that the required coating has been applied and tested in the manufacturing plant prior to shipment, in accordance with these Specifications. Flange faces of valves shall not be coated.
- E. **Valve Operators:** All valve operators, regardless of type, shall be manufactured, installed, adjusted, and tested by the valve manufacturer at the manufacturing plant. All valves shall open counter-clockwise unless otherwise shown or specified.
- F. **Position Indicators:** All shut-off valves, 14-inch and larger, shall have operators with position indicators. Where buried, these valves shall be provided with valve boxes and covers containing valve extensions and position indicators.
- G. **Valve Boxes and Covers:** Valve box extension may be 8-inch ductile iron or PVC pipe material. Pipe shall be sawn or machine cut on each end. No beveled section will be allowed. When the depth to top of valve operating nut is greater than 48 inches, a stem extension is required. Stem extension shall be 1-1/4 inch diameter steel rod in conformance with MCWD Standard Detail W-219, and shall extend to within 36 inches of the finished grade. Valve box shall be a concrete valve box with cast iron ring seat and lid marked "WATER"; Christy G5 or approved equal. When the cover is placed in the box, there shall be sufficient clearance around the cover, without cutting or damaging the pipe, such that the cover can be lifted by hand. The maximum clearance allowable shall be 3/16 inch. The covers and upper valve box sections shall be placed after the surrounding street surface has been completed.
- H. **Nuts and Bolts:** All nuts and bolts on valve flanges and supports shall be in accordance with *Section 05500, "Miscellaneous Metalwork."*
- I. **Lining and Coating:** All valves shall be lined and coated as specified *in Section 09800, "Protective Coatings."*

2.2 BUTTERFLY VALVES (AWWA)

- A. **General:** All butterfly valves shall be of the tight-closing, rubber-seat type with rubber seats that are securely fastened to the valve body. No metal-to-metal seating surfaces shall be permitted. Valves shall be bubble-tight at rated pressures with flow in either direction, and shall be satisfactory for applications involving throttling service and/or frequent operation after long periods of activity. Valve discs shall rotate 90-degrees from the full open position to the tight shut position. Valves shall meet the full requirements of ANSI/AWWA C504 for Class 150B. The manufacturer shall have manufactured tight-closing valves for a period of at least five year.
- B. **Manual Actuators:** Actuators shall conform to ANSI/AWWA C540, subject to the following requirements. Unless otherwise indicated, all above ground manually-actuated butterfly valves shall be equipped with a handwheel or chain operator as shown or specified. All buried valves shall be equipped with a 2-inch square actuating nut. Buried valves shall be equipped with a position indicator. All valves shall open counter-clockwise.

- C. **Worm Gear Actuators:** Buried valves shall be equipped with worm-gear actuators, lubricated and sealed to prevent entry of dirt or water into the housing.
- D. **Manufacturers, or Equal:**
 - 1. **De Zurik Corporation**
 - 2. **Kennedy Valve**
 - 3. **Henry Pratt Company**

2.3 RESILIENT WEDGE GATE VALVES

- A. Resilient wedge gate valves shall have a cast iron wedge fully encapsulated in resilient rubber to affect a bubble-tight seal across the wedge at a full differential of 250 psi. Valves shall be capable of being repacked under line pressure. All valves shall have non-rising stems and shall open counter-clockwise.
- B. **Manual Actuators:** Actuators shall conform to ANSI/AWWA C540, and unless otherwise indicated, all above ground manually-actuated gate valves shall be equipped with a hand-wheel or chain operator as shown or specified.
- C. **Manufacturers, or Equal:**
 - 1. **American Flow Control (Darling)**
 - 2. **Clow Valve Co.**
 - 3. **Kennedy Valve**
 - 4. **Mueller Company (Grinnell Corporation)**
 - 5. **Stockham Valves and Fittings**

2.5 PRESSURE REDUCING VALVES

- A. **??-inch Valve, General:** Pressure reducing valves shall be of the diaphragm actuated, pilot controlled, globe type. The valve body shall be cast iron with brass, bronze, and stainless steel trim. It shall contain a synthetic rubber disc designed to form a tight seal against a single removable seat. The diaphragm assembly containing a valve stem shall be fully guided at both ends by a bearing in the valve cover and an integral bearing in the valve seat. The diaphragm shall consist of nylon fabric bonded with synthetic rubber and shall not be used as a seating surface. This valve shall reduce a higher inlet pressure to a steady lower downstream pressure regardless of changing flow rate and varying inlet pressure. All necessary repairs shall be possible without removing the valve from the line.
- B. **4-inch Valve, General:** The 4-inch valve shall have the same requirements as the 12-inch valve except that the 4-inch valve shall be equipped with a "Low Flow By-Pass" which will respond to pressure changes from the main valve outlet of the 4-inch valve.

C. **Manufacturers, or Equal:**

1. **Cla-Val Company**
2. **Singer Valve**

PART 3 - EXECUTION

3.1 VALVE INSTALLATION

- A. **General:** All valves, gates, operating units, stem extensions, valve boxes, and accessories shall be installed in accordance with the manufacturer's written instructions and as shown and specified. All gates shall be adequately braced to prevent warpage and bending under the intended use. Valves shall be firmly supported to avoid undue stresses on the pipe.
- B. **Access:** All valves shall be installed to provide easy access for operation, removal, and maintenance and to avoid conflicts between valve operators and structural members or handrails.
- C. All valves that are unidirectional shall be tagged as such.
- D. All valves shall be thrust restrained. The CONTRACTOR has the option of using either thrust blocks or thrust restraining joints to restrain buried butterfly valves except where such thrust restraining devices are required as shown in the construction documents.
- E. All air-release valves shall have piped outlets to the nearest acceptable drain. They shall be firmly supported and installed in such a way as to avoid splashing and wetting of floors.

3.2 TESTING

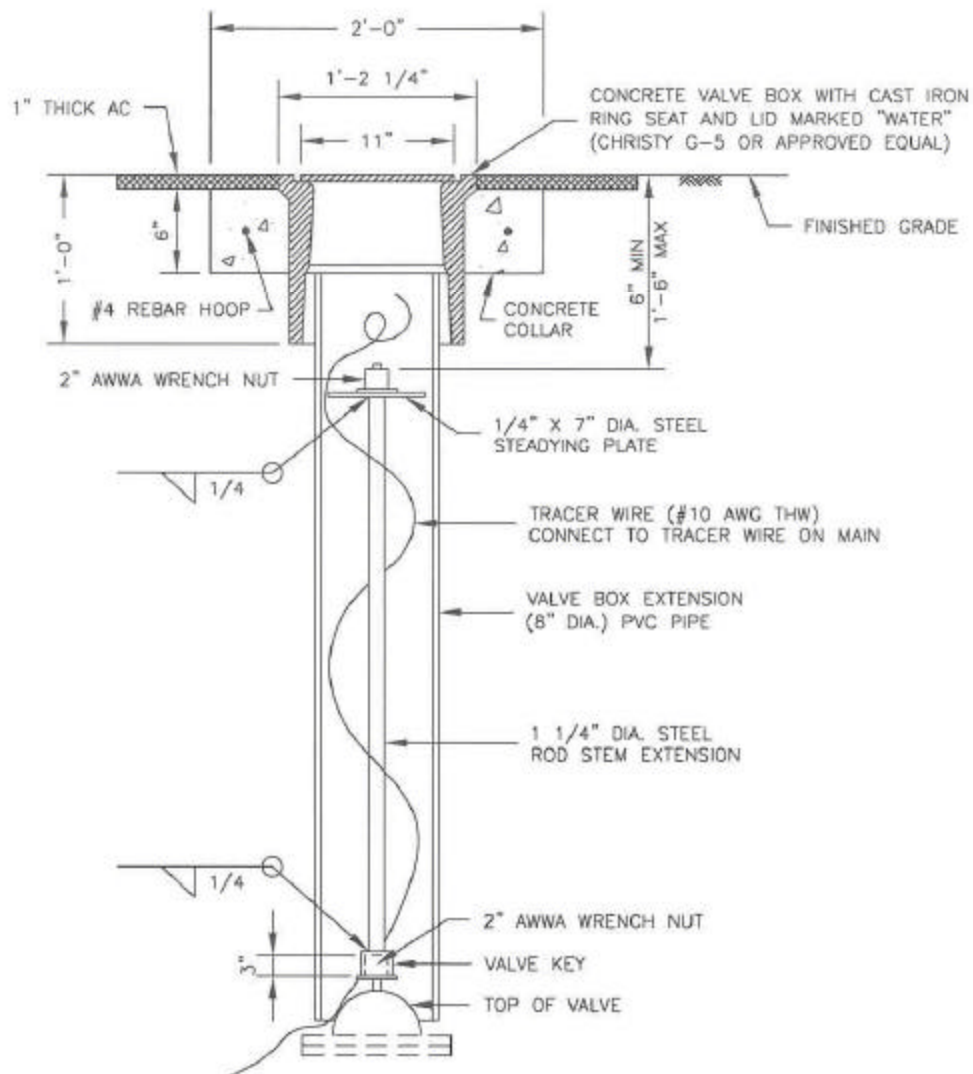
- A. Valves shall be tested at the same time the adjacent pipeline is tested. Joints shall show no visible leakage under test. Joints that show signs of leakage shall be prepared prior to final acceptance. If there are any special parts of control systems or operators that might be damaged by the pipeline test, they shall be properly protected. The CONTRACTOR shall be held responsible for any damage caused by the testing.

3.3 MEASUREMENT AND PAYMENT

Full compensation for Pressure Reducing valves, including labor, materials, equipment, and transportation shall be included in the unit (each) price bid for PRESSURE REDUCING STATION; Piping and Fittings, Valves, Isolating Valves, Pressure Gages, and Pipe Supports for, Bid Item No. 3.

Full compensation for all buried gate valves, including labor, materials, thrust restraint materials, equipment, and transportation shall be included in the unit (each) price bid for GATE VALVE, Bid Item No. 4.

– END OF SECTION –



NOTES:

- 1- MILL TOP OF STEM EXTENSION TO ACCEPT AWWA WRENCH NUT AND PEEN TOP OF EXTENSION TO SECURE NUT.
- 2- STEM EXTENSION REQUIRED ONLY WHEN THE DEPTH TO TOP OF VALVE OPERATOR NUT IS GREATER THAN 3'-0".
- 3- VALVE BOX EXTENSION MAY BE 8" PVC CLASS 150 PIPE MATERIAL.
- 4- FIBERGLASS EXTENSIONS MAY BE USED IN LIEU OF STEEL.

APPROVED BY
PROPOSED

DATE
11/96

VALVE BOX INSTALLATION



STANDARD

W-212



**Marina Coast Water District
Proposition 13 Urban Water Conservation
Capital Grant Application**

PART II

February 28, 2000

Part 2 - Table of Contents

<u>Section</u>	<u>Page</u>
Summary	3
A. Scope of Work: Relevance and Importance	5
1. Nature, scope and objectives of the project	5
1.1 Leak Detection Component	6
1.2 Metering Component	6
1.3 Pressure Management Component	6
1.4 Line Replacement Component	6
B. Scope of Work: Technical/Scientific Merit, Feasibility, Monitoring And Assessment	7
1. Methods, Procedures and Facilities	7
2. Task List and Schedule	7
3. Monitoring and Assessment	7
4. Preliminary Plans and Specifications	8
5. Qualifications of the Applicants and Cooperators	8
C. Budget and Costs	8
1. Budget Breakdown and Justification	8
2. Cost-sharing	9
3. Benefit Summary and Breakdown	9
3.1 Benefit Cost Methodology	10
3.2 Benefit Cost Analysis	10
3.3 Contribution to CALFED Goals	11
D. Outreach, Community Involvement and Acceptance	11
References	13

APPENDIX

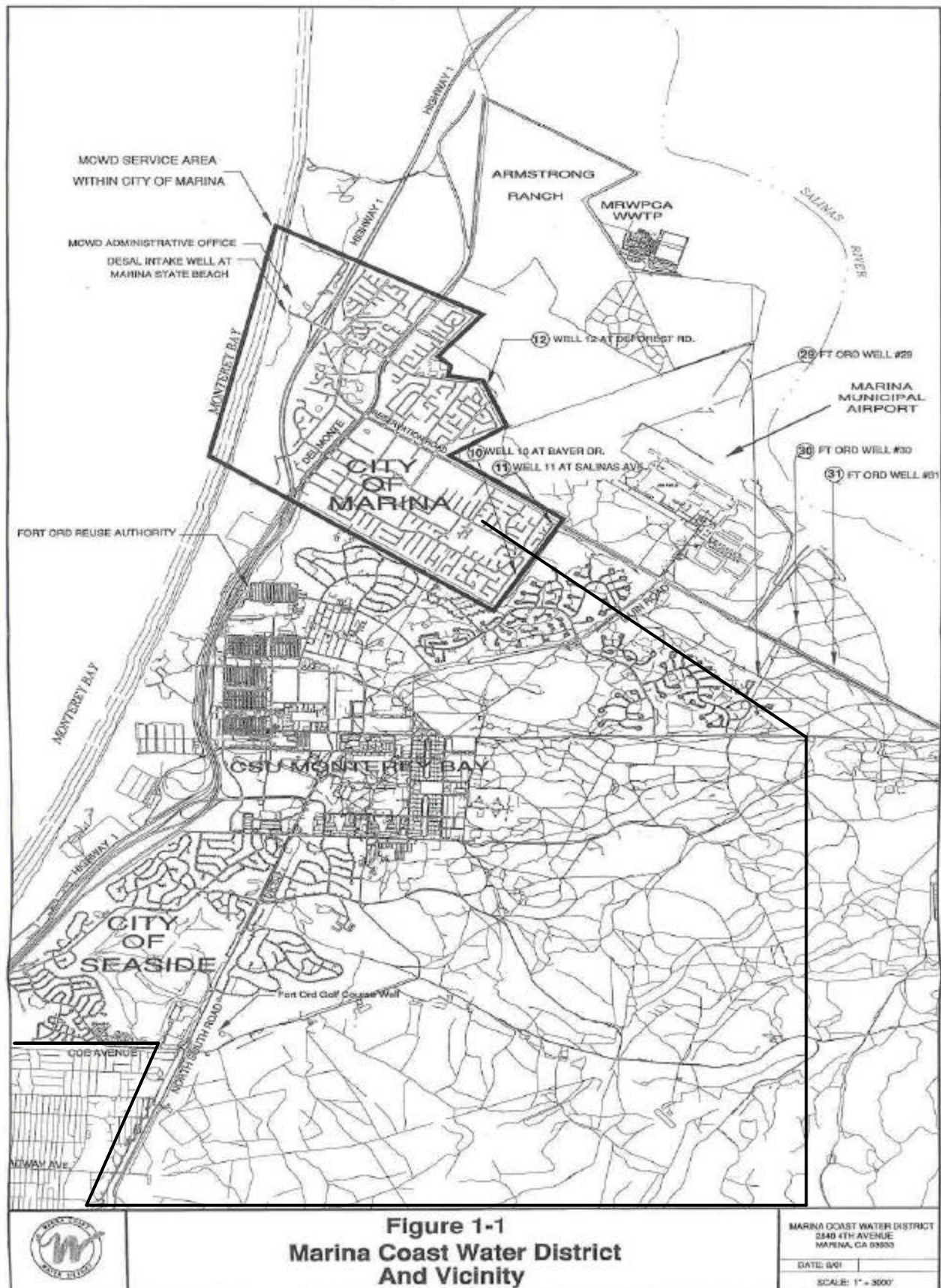
1. Preliminary Plans and Specifications
2. Resume
3. Supporting Tables
4. Board Resolution
5. Letters of Support

Summary

The Marina Coast Water District (MCWD) provides water and wastewater collection services to the City of Marina and the former Fort Ord army base in Monterey County, California (**Figure 1-1**). Potable water for both the City and the former Fort Ord comes from wells developed in the Salinas Valley Groundwater Basin, as well as a small desalination plant operated by the District. As a result of downsizing of the Army's presence at Fort Ord, MCWD took over operation of the water supply and wastewater collection systems in 1997. The former Fort Ord water system was neither designed nor maintained to public water industry standards and requires significant rehabilitation and improvement. Based on recently compiled 2001 data, it is estimated that the Fort Ord system has a 30% unaccounted water loss rate.

MCWD proposes to acquire a Proposition 13 Capital Grant to help it rehabilitate the Fort Ord system, conserving water and reducing the District's need to develop new sources. Capital investments called for in this grant application divide into four program components: additional leak detection, metering of single family residences and dedicated landscape uses, replacement of pressure reduction valves (PRVs) and associated gate valves in the distribution system and immediate replacement of certain badly leaking distribution lines. The goal of this program is to reduce the unaccounted water loss in the system, provide conservation incentives for customers through metering and commodity charges, protect groundwater yield and reduce the need for development of additional water resources. The objectives are 1) secure funding to complete all 130 miles of leak detection survey work for the former Fort Ord; 2) meter all unmetered single family (attached and detached) homes on the former Fort Ord, and place meters at dedicated landscape uses of California State University Monterey Bay, 3) replace all faulty PRVs and pressure control gate valves in the system reducing loss directly from the valves and faulty distribution lines, and 4) immediately replace distribution lines known to be seriously leaking. MCWD has received a water conservation feasibility study grant from the Department of Water Resources that provides funds to perform leak detection services on about half of 130 miles of Fort Ord distribution lines. This analysis will be focused on areas beyond that which are known to be in serious need of replacement. Results from that program will dictate additional rehabilitation efforts and potentially, subsequent grant applications for distribution system rehabilitation.

The total program cost is expected to be \$4,168,245. Water loss savings is expected to be about 410 acre-feet per year following meter installation and pipeline rehabilitation completion. Water efficiency savings are estimated to be about 1,329 acre-feet per year following PRV and gate valve completion. Water saved is expected to cost about \$983 per acre-foot as compared to alternative cost of water from MCWD's existing experience of providing desalination of \$1,961 per acre foot.



A. Scope of Work: Relevance and Importance

1. Nature, scope and objectives of the project.

This proposed program is a set of water system rehabilitation projects that are designed to stem the high rate of water loss from the Fort Ord water system. Stemming these losses will limit demands on groundwater resources in the Marina area, help reduce seawater intrusion in the upper and middle aquifers of the Salinas Groundwater Basin and reduce demands on the deep aquifer, which is considered vulnerable to seawater intrusion. Reducing losses will also cut the need to develop additional water resources necessary to improve the reliability of the District's water supply and reduce operating costs.

The goal of this program is to reduce the unaccounted water loss in the system, provide conservation incentives for customers through metering and commodity charges, protect groundwater yield and reduce the need for development of additional water resources. The objectives are 1) secure funds to complete leak detection survey for all 130 miles of the former Fort Ord (BMP 3); 2) meter all unmetered single family (attached and detached) homes on the former Fort Ord and place meters at approximately 40 acres of dedicated landscape uses at California State University Monterey Bay (BMP 4); 3) replace all faulty PRVs and associated gate valves in the system which will help reduce loss rates from faulty distribution lines (Pre-BMP #6), and; 4) immediately replace distribution lines known to be seriously leaking (BMP 3).

This program is consistent with the District's Urban Water Management Plan, which identifies the need for additional conservation efforts and development of alternative water resources to lessen the vulnerability of the District to the deep aquifer of the Salinas Valley Groundwater Basin. It is also consistent with the regional Salinas Valley Water Project that identifies need for development of additional water resources and efforts that will reduce groundwater pumping and subsequent seawater intrusion into the Salinas Valley Groundwater Basin. The program will reduce the burden to the California State University system in expanding CSU Monterey Bay by assisting the CSU system to reduce demands for other state funds to upgrade CSUMB and CSUMB Foundation infrastructure. The CSUMB campus is on the former Fort Ord. The CSUMB Foundation operates housing and dedicated landscape uses on the former base that will receive meters.

1.1 Leak Detection Component

MCWD has been awarded a water conservation feasibility study grant to assess the cost-effectiveness of implementation of additional BMPs and Pre-BMPs. This grant has a water audit and leak detection component. Due to amount limitations in the grant, only enough funds to assess half of the former Fort Ord water system was able to be included. This proposal requests the additional funds necessary to perform a complete

leak detection survey of the system which will reveal leaks that are otherwise unknown to the District and allow the district to prioritize system improvements.

1.2 Metering Component

The District proposes to install meters at single-family and attached housing units on the former Fort Ord and at landscape uses on the CSUMB campus. Meters will be placed at single family homes now utilized by the Army for residences related to the Defense Language Institute and the Naval Postgraduate School. Master meters will be placed at the service lines leading to multi-family attached housing at CSUMB. At each multi-family unit, sub-metering components will be installed for each housing unit necessary to effect the water savings assumed in this proposal. At this time, CSUMB has indicated that it will agree to provide a local share of \$250,000 towards the cost of submetering. This arrangement has been discussed with CSUMB facilities managers and an informal commitment to this arrangement has been reached. No expenditure of grant funds for master metering of CSUMB facilities would occur until a binding commitment to submeter is received from CSUMB, thus assuring the savings at the stated costs.

Eightteen meters will also be placed at individual dedicated irrigation use sites at the CSUMB campus totaling some 40 acres of irrigated use.

1.3 Pressure Management Component

Due to deterioration of pressure reduction valves and gate valves from lack of maintenance as a federal facility prior to takeover by the District, the former Fort Ord distribution system lacks adequate pressure control. Gate valves are inoperative and pressure reduction valves (PRVs) are both inoperative and mostly leaking as well. This leads to excessive breakage rates for pipes and joints and exacerbates leak rates where pipes are in disrepair. Replacement of faulty PRVs and gate valves will allow the restoration of proper pressure zones and allow the system to operate efficiently. It will also allow better isolation of specific areas in the event of breaches in the system and lower water losses in such events without loss of customer service. In order to achieve the water savings, replacement of gate valves and PRV's must be accomplished together.

1.4 Line Replacement Component

Since takeover of the former Fort Ord system by the District, staff has catalogued serious leaking sections of distribution system piping. Approximately 1,760 feet of distribution system piping in twenty sections will be replaced addressing over twenty known leaks.

B. Scope of Work: Technical/Scientific Merit, Feasibility, Monitoring and Assessment

1. Methods, Procedures and Facilities.

MCWD will employ contract labor to perform engineering design and construction for each program component except for engineering design work relative to the meter installation component. Request for proposals for engineering design work will be solicited for the PRV and pipeline replacement components and the leak detection services. Request for bids will be solicited for construction work related to the three components involving construction.

2. Task List and Schedule

Figure 2 is a work schedule for the program components. Deliverables for each program component include plans and specifications for the program component and completion of work detailed by the plans and specifications.

Figure 2																				
Work Schedule																				
	Months after Grant Receipt																			
Program Component	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1.0 Complete Leak Detection																				
1.1 RFP/Contracting																				
1.2 Leak Detection Field Work																				
1.3 Detection Report and Recommendations																				
2.0 Meter Installations																				
2.1 RFP Design and Contracting																				
2.2 Bid Package and Contracting																				
2.3 Installation																				
3.0 Pressure Reduction																				
3.1 RFP Design and Contracting																				
3.2 Bid Package and Contracting																				
3.3 Installation/replacement																				
4.0 Line Replacement																				
4.1 RFP Design and Contracting																				
4.2 Bid Package and Contracting																				
4.3 Installation																				
5.0 Monitoring																				
(monthly data, annual summary, minimum three years)																				

3. Monitoring and Assessment.

MCWD currently accounts for unexplained water loss for its two service areas, the City of Marina and the former Fort Ord system. MCWD will track water loss following completion of the components that are funded. If more than one component is funded, an attempt will be made to segregate the relative water savings for each component.

For the metering component, MCWD will identify a sample area of homes that can be isolated via a master meter. Before and after master meter readings will be made to assess an average per unit savings for residential water meters. For irrigation meter installations, actual water use will be compared to ET values for the same period and historical estimates of irrigation use. These values will be subtracted from overall unaccounted water loss reductions. The remainder of the reductions will be attributed to a combination of pressure relief valve, gate valve and water line replacement.

Monitoring will begin with collection of monthly data beginning upon completion of all program components and continue for a minimum of three years. An annual summary report will be prepared assessing the results of the program.

4. Preliminary Plans and Specifications

The Appendix contains preliminary plans and specifications for meters, PRVs and pipeline replacement. Upon award of grant, project-specific plans and specifications will be prepared

5. Qualifications of the Applicants and Cooperators

This project will be managed by David B. Meza, P.E., Chief Engineer of the Marina Coast Water District, whose resume is attached in the Appendix.

C. Budget and Costs

1. Budget Breakdown and Justification

Table 1 depicts summary budget and costs for the program. Individual program element budgets are provided in Appendix 3. Summary costs are as follows:

• Additional Leak Detection	\$75,000
• Metering	\$2,956,544
• Pressure reduction	\$959,029
• Line Replacement	<u>\$177,172</u>

Total	\$ 4,168,245
--------------	---------------------

A professional engineer estimated costs, using standard methods and a 10% contingency, a level utilized by Marina Coast Water District based upon engineering and construction experience.

The District will absorb overhead costs for project management and for development of plans and specifications for the metering project component. Table 1 depicts expected contractor costs to be funded by the grant. All facilities are in public easement or fee title lands, or otherwise do not require additional land purchase or easement. No structures, legal, license or other costs are expected.

2. Cost-sharing

The District proposes to absorb overhead costs for project management and development of plans and specifications for the metering project component. CSUMB has indicated that it will pledge to commit \$250,000 towards the metering component of the project for CSUMB housing

3. Benefit Summary and Breakdown

The program and individual project components will serve to reduce water losses from leaking system infrastructure and by providing for water use accountability for homes and irrigated areas. Estimated savings and benefit/cost analysis follows below.

Table 1

Budget Summary

Project Description

	Materials	Labor	Other	Project Total
1.0 Additional Leak Detection			\$75,000	\$75,000
2.0 Metering				
2.1 Residential Meters				
2.1.1 Army	\$230,700	\$641,160		
2.1.2 CSUMB	\$46,960.00	\$328,803	\$1,153,000	
2.2 Landscape	\$8,500	\$29,592		
2.3 Environ., Engr.and Admin.			\$273,957	
2.4 Construction Contingency			\$243,872	
Subtotal	\$286,160	\$999,555	\$1,670,829	\$2,956,544
3.0 Pressure Reduction				
3.1 Pressure Reduction Valves	\$445,000	\$134,100		
3.2 Gate Valves	\$79,900	\$152,800		
3.3 Environ., Engr.and Admin.			\$64,049	
3.4 Construction Contingency			\$83,180	
Subtotal	\$524,900	\$286,900	\$147,229	\$959,029
4.0 Distribution Line Replacement				
4.1 Line Replacement	\$65,400	\$69,200		
4.2 Environ., Engr.and Admin.			\$29,612	
4.3 Construction Contingency			\$13,460	
Subtotal	\$65,400	\$69,200	\$43,072	\$177,672
Grand Total				\$4,168,245

3.1 Benefit Cost Methodology

The Marina Coast Water District currently relies on groundwater and a small amount of desalinated water to serve its customers. Plans are underway to recycle the total amount of wastewater available to the district and provide a distribution system that will allow this recycled water to be put to beneficial use (MCWD Urban Water Management Plan 2001). As noted in the MCWD Urban Water Management Plan, additional efforts are necessary to lessen demands on the groundwater resources and assure supply reliability, such as the conservation projects proposed here.

Alternatives identified in the Urban Water Management Plan for additional water resources include more desalination or water transfers from agricultural uses in the Salinas Valley. For purposes of benefit cost analysis, additional desalination is posed as the alternative to the conservation projects described in this proposal. While water transfers from agriculture might be a more cost-effective alternative, they are deemed less feasible at this point due to their negative impact on the Salinas Valley region's agricultural economy. Reliably estimating the costs of such an approach lacks precision at this time due to unknown mitigation costs and the potential need for new infrastructure development necessary to effect a transfer.

The most likely desalination expansion would be an expansion of the District's current desalination facility. Based on current actual costs of this facility (See Appendix Table 3-1) additional water supply could cost \$1,961 per acre-foot. For purposes of benefit-cost analysis, this potential water supply cost is used as an estimate of alternative supply costs.

Groundwater is not considered an alternative water supply as the Salinas Valley Groundwater Basin is currently in an overdraft condition and seawater continues to intrude into the upper and middle aquifers in the vicinity of the District's groundwater wells.

3.1 Benefit Cost Analysis

Table 2 depicts the benefit cost analysis for projects within each program component. Appendix 3 contains tables depicting detailed benefit cost analysis by component and program costs. No benefit cost is calculated for the leak detection program as it would be dependent upon replacement or repair costs for leaks detected which are currently unknown. This analysis is also believed to be conservative in that it does not take into account savings losses from leaking lines or fewer failures of joints and valves due to the benefits of better pressure control (pressure control savings are based on rehabilitation of PRV's only).

Table 2 Program Benefit - Cost

Program Component	Annual Savings Acre-Feet	Average Cost per AF Savings	Average Benefit- Cost Ratio
Metering	199	\$ 1288*	2.63*
Pressure Reduction	1329	\$ 187	11.51
Line Replacement	211	\$ 1,475	1.46

* The Army cost savings per AF is \$485 with a B/C ratio of 4.04. The CSUMB cost savings per AF is \$1,607 with a B/C ratio of 1.22.

3.3 Contribution to CALFED Goals

The Marina Coast Water District is outside of the CALFED problem and solution areas. However, this program is consistent with CALFED goals and furthers regional solutions to water resource problems. To the extent water resource solutions for the District can be achieved within the Salinas Valley watershed, there will be lessened pressure to seek imported water source solutions via the State or Federal water projects and a connection to San Luis Reservoir.

The program is consistent with the following CALFED element goals:

- Water management – the program will improve the availability and reliability of the District's supplies through water use efficiency improvements
- Water Use Efficiency – the program will increase "real water" conservation by reducing water waste which otherwise would be irrecoverable.
- Watershed Management – the program will contribute to the watershed-wide Salinas Valley Plan which coordinates water resource solutions within the Salinas Valley Watershed.

D. Outreach, Community Involvement and Acceptance

The District has been in close communication and has coordinated with its key partners in this program, the U.S. Army and California State University Monterey Bay. Both entities are strongly supportive of this application (see Appendix 4) as a grant resulting from the application would enable them to better manage their water use and lower their operating costs.

No adverse third party impacts are expected from the project. The project will create indirect third-party benefits through lowering of water demands, lessening pressure on groundwater resources and the need for development of expensive alternative resources.

Until the project is bid for construction, actual labor force composition is unknown. However based on District experience, it is highly likely that local Monterey County based contractors will be utilized. In addition, the Board of Directors mandate that the local contractors and/or the local labor force, which may be upwards of 50 personnel to be employed for the aggregate of the program components, shall perform of a minimum of 50% of the work. In addition, the District will require contractors to demonstrate training opportunities being provided through contract execution.

References

American Water Works Association/California Department of Water Resources, Water Audit and Leak Detection Guidebook No. 5. August, 1986.

California Urban Water Conservation Council, BMP Cost & Savings Study. July, 2000

Marina Coast Water District, 2001 Urban Water Management Plan, December, 2001.

Table A-4

METER SAVINGS		Estimated Conservation Savings and Benefit					
		Cost Analysis					Alternative Water Cost per AF
		Current	Metering	Annual	Ammortized	Cost/af	
		Avg. Ann Use	Conservation	Savings	Ann. Project	savings	
	Unit	per Unit	Factor (1)	(af/yr)	Cost (2)		
SF Units							
Army Units	1538	0.33	0.25	126.9	\$61,550.81	\$ 485.1	\$ 1,961.00
CSUMB Units	1153	0.25	0.25	72.1	\$115,807.42	\$1,607.0	\$ 1,961.00

Estimated Conservation Savings and Benefit Cost Analysis

4.04
1.22

14.93
8.09

[illegible]

CSUMB METER COSTS

A. Construction Cost

Count	Material Cost		Labor & Equipm	
	Unit Cost	Extended Cos	Weeks	Cost/Week

Schoonover Park

Eddy Court 1" Meters	4	\$ 120.00	\$ 480.00	0.4	\$ 16,440.00
Eddy Court 2" Meters	5	\$ 400.00	\$ 2,000.00	0.5	\$ 16,440.00
Barbee Court 1" Meters	4	\$ 120.00	\$ 480.00	0.4	\$ 16,440.00
Barbee Court 2" Meters	5	\$ 400.00	\$ 2,000.00	0.5	\$ 16,440.00
White Court 1" Meters	3	\$ 120.00	\$ 360.00	0.3	\$ 16,440.00
White Court 2" Meters	2	\$ 400.00	\$ 800.00	0.2	\$ 16,440.00
Combs Court 1" Meters	4	\$ 120.00	\$ 480.00	0.4	\$ 16,440.00
Combs Court 2" Meters	6	\$ 400.00	\$ 2,400.00	0.6	\$ 16,440.00
Warrelman Court 1" Meter	4	\$ 120.00	\$ 480.00	0.4	\$ 16,440.00
Warrelman Court 2" Meter	4	\$ 400.00	\$ 1,600.00	0.4	\$ 16,440.00
Thomas Court 1" Meter	3	\$ 120.00	\$ 360.00	0.3	\$ 16,440.00
Thomas Court 2" Meter	3	\$ 400.00	\$ 1,200.00	0.3	\$ 16,440.00
Henson Court 1" Meter	5	\$ 120.00	\$ 600.00	0.5	\$ 16,440.00
Henson Court 2" Meter	4	\$ 400.00	\$ 1,600.00	0.4	\$ 16,440.00
Sherman Court 1" Meter	2	\$ 120.00	\$ 240.00	0.2	\$ 16,440.00
Sherman Court 2" Meter	6	\$ 400.00	\$ 2,400.00	0.6	\$ 16,440.00
Holovits Court 1" Meter	4	\$ 120.00	\$ 480.00	0.4	\$ 16,440.00
Holovits Court 2" Meter	4	\$ 400.00	\$ 1,600.00	0.4	\$ 16,440.00
Scott Court 1" Meter	4	\$ 120.00	\$ 480.00	0.4	\$ 16,440.00
Scott Court 2" Meter	4	\$ 400.00	\$ 1,600.00	0.4	\$ 16,440.00
Jackson Court 1" Meter	2	\$ 120.00	\$ 240.00	0.2	\$ 16,440.00
Jackson Court 2" Meter	3	\$ 400.00	\$ 1,200.00	0.3	\$ 16,440.00
Bundage Court 1" Meters	3	\$ 120.00	\$ 360.00	0.3	\$ 16,440.00
Bundage Court 2" Meters	5	\$ 400.00	\$ 2,000.00	0.5	\$ 16,440.00

Devers Court 1" Meters	11	\$ 120.00	\$ 1,320.00	1.1	\$ 16,440.00
Wedemeyer Court 1" Meters	10	\$ 120.00	\$ 1,200.00	1.0	\$ 16,440.00
Chennault Court 1" Meter	3	\$ 120.00	\$ 360.00	0.3	\$ 16,440.00

Fredricks Park 1" Meters	52	\$ 120.00	\$ 6,240.00	5.2	\$ 16,440.00
Fredricks Park 2" Meters	31	\$ 400.00	\$ 12,400.00	3.1	\$ 16,441.00
			\$ 46,960.00		

Sub-Meter Costs

Cost for Units	1153	\$ 1,000.00			
Residential Meter Subtotal					

Landscape

2 inch	17	\$ 450.00	\$ 7,650.00	1.7	\$ 16,440.00
3 inch	1	\$ 850.00	\$ 850.00	0.1	\$ 16,440.00
			\$ 8,500.00		

Construction Subtotal

Contingency

Construction Total

B. Environmental

C. Engineering

D. Admin & Legal

Total CSUMB Meter Cost

Average Cost Per Meter

CSUMB Agrees to Provide a Local Match of \$500/unit

Total CSUMB Meter Cost to be Grant Funded

Average Cost Per Meter after Local Match

Total No. of Units	1153
Total Bldgs	194
Land Area, acres	20.32
Bldg/acres	9.55

ient Cost	
Extended Cost	Total

\$	6,576.00	\$	7,056.00
\$	8,220.00	\$	10,220.00
\$	6,576.00	\$	7,056.00
\$	8,220.00	\$	10,220.00
\$	4,932.00	\$	5,292.00
\$	3,288.00	\$	4,088.00
\$	6,576.00	\$	7,056.00
\$	9,864.00	\$	12,264.00
\$	6,576.00	\$	7,056.00
\$	6,576.00	\$	8,176.00
\$	4,932.00	\$	5,292.00
\$	4,932.00	\$	6,132.00
\$	8,220.00	\$	8,820.00
\$	6,576.00	\$	8,176.00
\$	3,288.00	\$	3,528.00
\$	9,864.00	\$	12,264.00
\$	6,576.00	\$	7,056.00
\$	6,576.00	\$	8,176.00
\$	6,576.00	\$	7,056.00
\$	6,576.00	\$	8,176.00
\$	3,288.00	\$	3,528.00
\$	4,932.00	\$	6,132.00
\$	4,932.00	\$	5,292.00
\$	8,220.00	\$	10,220.00

\$	18,084.00	\$	19,404.00
\$	16,440.00	\$	17,640.00
\$	4,932.00	\$	5,292.00

\$	85,488.00	\$	91,728.00
\$	50,967.10	\$	63,367.10
\$	328,803.10		

	\$1,153,000.00
	\$1,528,763.10

\$	27,948.00	\$	35,598.00
\$	1,644.00	\$	2,494.00
\$	29,592.00		

	\$1,566,855.10
10.00%	\$ 156,685.51
	\$1,723,540.61

1.00%	\$ 17,235.41
10.00%	\$ 172,354.06

1.00% \$ 17,235.41 \$ 206,824.87

\$1,930,365.48

\$ 1,674.21

\$ 576,500.00

\$1,353,865.48

\$ 1,174.21

Table A-1
MCWD Desalter
Cost

MCWD DESALINATION FACILITY ESTIMATED CAPITAL AND O&M COSTS

	ITEM	ANNUAL COST 2002-2003 (\$)
A	Debt Service for Capital Funding (20 yrs)	\$248,857
B	Energy Costs (Off-Peak operation -- 11hrs/day M-F, 24hrs/day Sa,Su)	\$75,000
C	Personnel - 1 FT operator	\$50,000
D	Supplies/Maintenance/Equipment	\$45,000
E	Membrane replacement every 5 years at \$100,000 per replacement)	\$20,000
F	Mitigation Monitoring Program (Fugro and Kinetic Labs) - Requirement Complete	\$0
G	Lab Personnel for ongoing water quality monitoring (estimate 50% of total lab time)	\$45,000
H	Contract Testing	\$1,300
I	Engineering Consultants	\$5,000
	TOTAL	\$490,157
	Desalinated Water Production(af/yr)	250
	ESTIMATED PRODUCTION COST (\$/AF)	\$1,961

Table A-3
Marina Coast Water District
Proposition 13 Capital Grant Application Budget
Metering Cost Estimates

Marina Coast Water District

Program Component

Meters

ARMY METER COSTS

A. Construction Cost	Material Cost		Labor & Equipment Cost			Total
	Count	Unit Cost Extended Cost	Weeks	Cost/Week	Extended Cost	
Army Housing 3/4"	1538	\$ 150.00 \$ 230,700.00	39	\$ 16,440.00	\$ 641,160.00	\$ 871,860.00
Construction Subtotal						\$ 871,860.00
Contingency					10.00%	\$ 87,186.00
Construction Total						\$ 959,046.00
B. Environmental					1.00%	\$ 9,590.46
C. Engineeering					5.00%	\$ 47,952.30
D. Admin & Legal					1.00%	\$ 9,590.46
Total Army Meter Cost						\$ 1,026,179.22
Average Cost per Meter						\$ 667.22

Table A-3
Marina Coast Water District
Proposition 13 Capital Grant Application Budget
Metering Cost Estimates

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Table 1
Marina Coast Water District
Proposition 13 Capital Grant Application Budget

PRV

A. Construction Cost	Count	Material Cost		Labor Cost		Total
		Unit Cost	Extended Cost	Unit Cost	Extended Cost	
2"/3" & 8" PRV & Box	8	\$ 20,000.00	\$ 160,000.00	\$ 5,400.00	\$ 43,200.00	\$ 203,200.00
3" & 12" PRV & Box	2	\$ 25,000.00	\$ 50,000.00	\$ 5,400.00	\$ 10,800.00	\$ 60,800.00
8" PRV & Box	10	\$ 15,000.00	\$ 150,000.00	\$ 5,400.00	\$ 54,000.00	\$ 204,000.00
12" PRV & Box	2	\$ 25,000.00	\$ 50,000.00	\$ 8,700.00	\$ 17,400.00	\$ 67,400.00
16" PRV & Box	1	\$ 35,000.00	\$ 35,000.00	\$ 8,700.00	\$ 8,700.00	\$ 43,700.00

Gate Valves

A. Construction Cost		Count	Material Cost		Labor Cost		Total Cost					
			Unit Cost	Extended Cost	Unit Cost	Extended Cost						
Valves												
6 inch	15	\$	400.00	\$	6,000.00	\$	10,500.00	\$	16,500.00			
8 inch	36	\$	500.00	\$	18,000.00	\$	700.00	\$	25,200.00	\$	43,200.00	
10 inch	8	\$	800.00	\$	6,400.00	\$	700.00	\$	5,600.00	\$	12,000.00	
12 inch	5	\$	1,000.00	\$	5,000.00	\$	3,500.00	\$	17,500.00	\$	22,500.00	
16 inch	3	\$	4,000.00	\$	12,000.00	\$	8,000.00	\$	24,000.00	\$	36,000.00	
20 inch	3	\$	6,500.00	\$	19,500.00	\$	10,000.00	\$	30,000.00	\$	49,500.00	
20 inch (very difficult location)	2	\$	6,500.00	\$	13,000.00	\$	20,000.00	\$	40,000.00	\$	53,000.00	
Roadway Repair										\$	20,000.00	
Construction Subtotal										\$	831,800.00	
Contingency										10.00%	\$	83,180.00
Construction Total										\$	914,980.00	
B. Environmental										1.00%	\$	9,149.80
C. Engineeering										5.00%	\$	45,749.00
D. Admin & Legal										1.00%	\$	9,149.80
Total PRV and Valve Cost										\$	979,028.60	

Table 1
Marina Coast Water District
Proposition 13 Capital Grant Application Budget

Table 1
Marina Coast Water District
Proposition 13 Capital Grant Application Budget

Distribution Line Replacement

A. Construction Cost	Length	Material Cost		Labor Cost		Total Cost
		Unit Cost	Extended Cost	Unit Cost	Extended Cost	
6" Pipe Bwt Tank and EG	1000	\$ 35.00	\$ 35,000.00	\$ 35.00	\$ 35,000.00	\$ 70,000.00
line 2	40	\$ 40.00	\$ 1,600.00	\$ 45.00	\$ 1,800.00	\$ 3,400.00
line 3	40	\$ 40.00	\$ 1,600.00	\$ 45.00	\$ 1,800.00	\$ 3,400.00
line 4	40	\$ 40.00	\$ 1,600.00	\$ 45.00	\$ 1,800.00	\$ 3,400.00
line 5	40	\$ 40.00	\$ 1,600.00	\$ 45.00	\$ 1,800.00	\$ 3,400.00
line 6	40	\$ 40.00	\$ 1,600.00	\$ 45.00	\$ 1,800.00	\$ 3,400.00
line 7	40	\$ 40.00	\$ 1,600.00	\$ 45.00	\$ 1,800.00	\$ 3,400.00
line 8	40	\$ 40.00	\$ 1,600.00	\$ 45.00	\$ 1,800.00	\$ 3,400.00
line 9	40	\$ 40.00	\$ 1,600.00	\$ 45.00	\$ 1,800.00	\$ 3,400.00
line 10	40	\$ 40.00	\$ 1,600.00	\$ 45.00	\$ 1,800.00	\$ 3,400.00
line 11	40	\$ 40.00	\$ 1,600.00	\$ 45.00	\$ 1,800.00	\$ 3,400.00
line 12	40	\$ 40.00	\$ 1,600.00	\$ 45.00	\$ 1,800.00	\$ 3,400.00
line 13	40	\$ 40.00	\$ 1,600.00	\$ 45.00	\$ 1,800.00	\$ 3,400.00
line 14	40	\$ 40.00	\$ 1,600.00	\$ 45.00	\$ 1,800.00	\$ 3,400.00
line 15	40	\$ 40.00	\$ 1,600.00	\$ 45.00	\$ 1,800.00	\$ 3,400.00
line 16	40	\$ 40.00	\$ 1,600.00	\$ 45.00	\$ 1,800.00	\$ 3,400.00
line 17	40	\$ 40.00	\$ 1,600.00	\$ 45.00	\$ 1,800.00	\$ 3,400.00
line 18	40	\$ 40.00	\$ 1,600.00	\$ 45.00	\$ 1,800.00	\$ 3,400.00
line 19	40	\$ 40.00	\$ 1,600.00	\$ 45.00	\$ 1,800.00	\$ 3,400.00
line 20	40	\$ 40.00	\$ 1,600.00	\$ 45.00	\$ 1,800.00	\$ 3,400.00
leak detection						\$ 30,000.00
Construction Subtotal				\$	69,200.00	\$ 164,600.00
Contingency					10.00%	\$ 16,460.00
Construction Total						\$ 181,060.00
B. Environmental					5.00%	\$ 9,053.00
C. Engineering					10.00%	\$ 18,106.00
D. Admin & Legal					5.00%	\$ 9,053.00

Table 1
Marina Coast Water District
Proposition 13 Capital Grant Application Budget

Total Pipe Cost

\$ 217,272.00

Total Project Benefits

Program	Cost	C/B Ratio	Total Benefits
Metering	\$ 2,956,544	2.63	\$ 7,775,711
Pressure Reduction	\$ 959,029	11.51	\$ 11,038,424
Line Replacement	\$ 177,672	1.46	\$ 259,401
	\$ 4,093,245		\$ 19,073,536